TEAM SHAN COMMUNITY PROJECT

Literature Review

Breast Cancer in Young Women

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Table of Contents

INTRODUCTION CHAPTER 1

Background

Cancer is a prevalent disease among the human population. Worldwide, as in Canada, breast cancer is the most commonly diagnosed cancer in women (World Health Organization, 2006; Canadian Cancer Society, 2006). Although men can develop breast cancer, less than 1% of all breast cancer cases detected in Canada occur in males (Public Health Agency of Canada, 1999). In Canada, approximately 30% of all cancer cases are classified as breast cancer (Public Health Agency of Canada, 1999).

Cancer, or neoplasm, is a group of more than 200 different diseases that are characterized by uncontrolled, abnormal growth of cells than can invade healthy tissues (Canadian Cancer Society, 2004). Breast cancers begin in the tissues of the breast including the glandular tissue, milk glands, lymph tissue, and even the connective tissue and lead to various neoplasms including ductal carcinoma (the most common), lobular carcinoma, Paget's disease, lymphomas, and sarcomas. The prognosis and treatment of these different types of breast cancer vary (Canadian Cancer Society, 2006).

The symptoms of breast cancer include a lump in the breast or axilla (armpit), which can be detected by the woman herself, through a clinical breast examination, or mammogram. Changes in the nipple are another symptom and may include the nipple becoming inverted, a crusting or ulceration of the nipple, or a discharge from the nipple. Women should also note any changes in the size or shape of their breasts or changes in the skin of the breast, including dimpling, thickening, redness, or distended veins as these may also indicate a breast cancer. If the cancer cells are found early, treatment can reduce the chance of the cancer cells invading other tissues (Canadian Cancer Society, 2006).

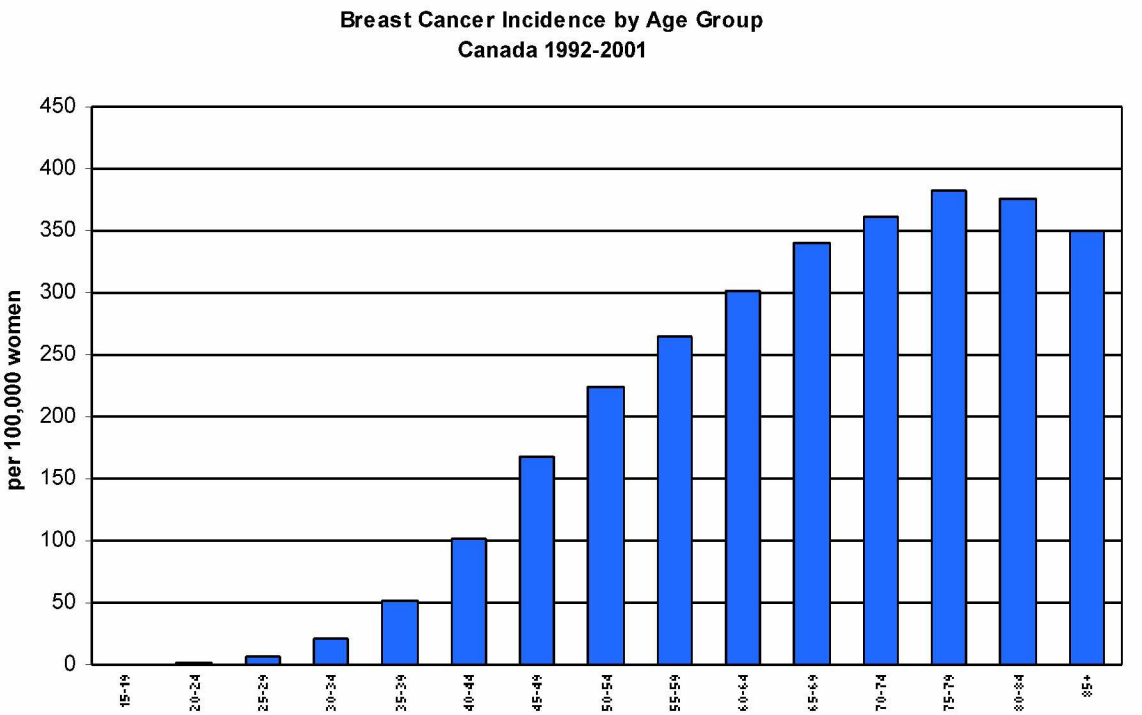
The Canadian Cancer Society (2006) recommends that women over the age of 40 years have a clinical breast examination by a trained health care professional at least every two years. They also recommend that women 50 to 69 years of age have a mammogram every two years. They state that breast self-examinations are less reliable in finding breast cancer, but help women learn what is "normal" for them. There are no recommendations made for women under the age of 40 years.

Research has not conclusively identified all of the factors associated with developing breast cancer. As stated earlier, females are significantly more likely to develop breast cancer than males. Age also plays a key role. The incidence (new diagnosis) of breast cancer increases

significantly with age. About 15 young Canadian women, between the ages of 15 and 19 years, were diagnosed with breast cancer between 1992 and 2001 compared to over 20,000 women between the ages of 65 and 69 years (Public Health Agency of Canada, 2006). See Figure 1.1 for the incidence rates by age group.

Other factors implicated in the development of breast cancer include a strong family history of breast cancer (especially in first degree relatives: sister, mother), a history of certain types of benign breast disease, high levels of radiation exposure to the chest, especially when young (Public Health Agency of Canada, 2004). Other risk factors include being overweight or obese after menopause, never having children or late age of first birth (after 30 years), the early onset of menstruation (before 12 years), and the late onset of menopause (after age 55), never breastfeeding, and taking hormone replacement therapy (Public Health Agency of Canada, 1999). Risk factors less consistently associated with an increased risk of developing breast cancer are drinking alcohol, being physically inactive, smoking tobacco, and using birth control pills (Public Health Agency of Canada, 2004). Risk factors have also been related to different demographic factors. Women are at increased risk for being diagnosed with breast cancer if they live in an urban area, belong to a higher socio-economic class or are born in North American or Northern Europe (Public Health Agency of Canada, 1999).

Table 1.1

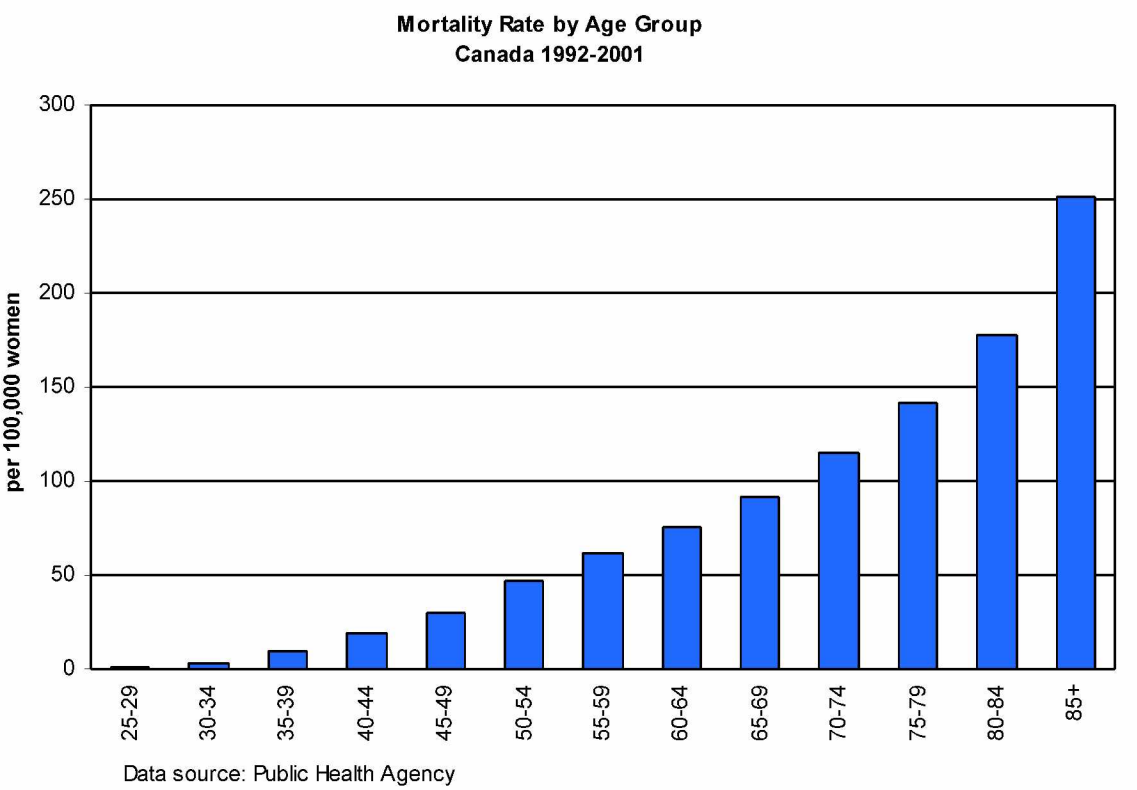


Data source: Public Health Agency of Canada

The five-year relative survival of women diagnosed with breast cancer is 82%, meaning that about 82% of women diagnosed with breast cancer will survive as long as women of a similar age. However, the relative survival rates vary by age. Young women, 15 to 39 years of age at diagnosis had a relative survival rate of 73% (National Cancer Institute of Canada, 2002).

Of all cancer related deaths, breast cancer deaths ranks second (lung cancer is ranked as first) (Health Canada, 2004b). Depending on the type of tumour, the amount of spread, age of the patient, menopausal status, and general health of the patient, different treatments are prescribed (Public Health Agency of Canada, 1999). Breast cancer treatment includes surgery, radiation, chemotherapy, and hormonal therapy (Public Health Agency of Canada, 1999). As noted with breast cancer incidence, the mortality rate increases with age. In Canada, about 8 women between the ages of 25 and 29 die of breast cancer every year compared to over 600 women between the ages of 70 and 74 years (Public Health Agency of Canada, 2006). See Figure 1.2 for mortality rates by age group.

Figure 1.2



Breast Cancer in Younger Women

As noted, the incidence and mortality due to breast cancer is much lower in younger women than older women. However, the five-year relative survival is lower. In Ontario, almost 400 women under 40 years of age are diagnosed with breast cancer every year including 32 women between the ages of 15 and 29 years. About 64 young women (under 40 years) die from breast cancer in Ontario every year, including about 3 to 4 women between 15 and 29 years (1992-2001: Public Health Agency of Canada, 2006).

The risk factors for the development of breast cancer in young women, under 40 years of age are not well publicized. However, research indicates that a family history of early onset breast cancer is associated with a higher risk of early onset breast cancer (Lynch, Watson, Conway, Fitzsimmons, & Lynch, 1988; Althuis, Brogan, Coates, Daling, Gammon, et al., 2003; Dite, Jenkins, Southey, Hocking, Giles, et al., 2003). There is also some evidence women with an early onset of menstruation, early attainment of height, and a lean body type are at some increased risk for early onset breast cancer (Swanson, Coates, Schoenberg, Malone, Gammon, et al., 1997; Althuis, Brogan, Coates, Daling, Gammon, et al., 2003; McCredie, Dite, Giles, & Hopper, 1998; Li, Malone, White, & Daling, 1997; Swerdlow, DeStavola, Sloderus, Holm, Kaprio, et al., 2002).

Since young women, those under 50 years of age, are not targeted for breast screening, it is important to make them aware of the risk factors for early onset breast cancer and the need to learn and practice breast self-examination and to request clinical breast examinations during physical examinations.

Data from the 2003-04 Canadian Community Health Survey, Ontario only (women 18 and older only), indicate that only 54% of 18 to 29 year old women in the study area (see table 1.1) had ever had their breasts examined by a health care professional. Similarly, only 58% of women in this age group had ever done a breast self examination. Less than one-half (36%) of young women who have ever done breast self-examination complete them every month.

The reasons given for not having a clinical breast examination in the past two years include (in order or frequency): the respondent didn't think it was necessary, the respondent's physician didn't think it was necessary, and they didn't get around to doing it.

Table 1.1

Ontario Public Health Unit Areas Completing Canadian Community Health Survey (2003-04) Items Regarding Breast Health

Other than a mammogram, have you had your breasts examined for lumps by a doctor or other health professional?	Huron County Health Unit Perth District Health Unit Elgin St Thomas Health Unit Renfrew Health Unit Oxford County Health Unit Chatham-Kent Health Unit	Lambton Health Unit Eastern Ontario Health Unit Windsor-Essex Health Unit Middlesex-London Health Unit City of Hamilton Health Dept. City of Ottawa Health Dept.
Have you ever examined your breasts for lumps?	Huron County Health Unit Perth District Health Unit Elgin St Thomas Health Unit Oxford County Health Unit	Chatham-Kent Health Unit Lambton Health Unit Windsor-Essex Health Unit Middlesex-London Health Unit

Table 1.2

Canadian Community Health Survey, 2003-04 Results

Age group	Ever had a clinical breast exam?	Ever done breast self-examination
18-19	26.9	43.3
20-24	51.8	56.5
25-29	68.7	68.2
30-34	79.1	75.8
35-39	86.8	82.2
40-44	90.5	87.5
45-49	89.6	87.0
50-54	83.5	81.9
55-59	86.9	84.7
60-64	83.3	82.1
70-74	83.1	76.2
75-79	82.8	79.4
80-84	70.9	71.8
85+	66.3	68.5
All ages	63.1	50.4

Outline of the report

The purpose of this report is to outline the findings of three literature reviews. The first literature review is focused on programs aimed at increasing the awareness of breast cancer in young women. This literature review will be referred to the breast cancer awareness literature review throughout the report. The second literature review was conducted on the signs and symptoms of breast cancer in young women. The third literature review is also focused on the signs and symptoms; however, the purpose is to review secondary signs of breast cancer in young women. Secondary signs and symptoms include the signs as symptoms that appear as a result of the breast cancer spreading to other areas of the body. Metastatic breast cancer can result in a number of signs and symptoms that are not a direct result of breast cancer but of a result of the cancer spreading to other parts of the body. The specific goals and objective for each literature review is outlined in chapter two. Chapter three describes the methods used to conduct the literature searches and the results of these literature searches are outlined in chapter four. Chapter five discusses the result from the literature review. Recommendations and conclusions regarding breast cancer awareness in young women and signs and symptoms of breast cancer based on the literature searches are outlined in the final chapter, chapter six.

GOALS AND OBJECTIVES CHAPTER 2

Goals

The primary goal of this report was to conduct a literature review focusing on health promotion awareness projects targeting breast cancer. The literature reviews will provide information for a project aimed at increasing early detection of breast cancer in young women. Young women, for this report, are considered between the ages of 18 and 29.

The secondary goal of this report was to conduct a literature review on signs and symptoms of breast cancer in young women. The reason for the secondary goal is to provide accurate information for the health promotion campaign outlined in the primary goal.

Objectives

There are three main objectives for completing the literature reviews. The objectives will assist in developing a successful health promotion campaign on breast cancer for young women. The objectives for this report include:

- Determine the type of breast cancer health promotion campaigns that have been used to increase awareness in young women
- Discover successful breast cancer health promotion campaigns in young women
- Confirm known signs and symptoms of breast cancer in young women

METHODS CHAPTER 3

Introduction

A review was conducted in order to find published research that focused on (1) programs directed towards increasing awareness of breast cancer in young women (2) signs and symptoms of breast cancer in young women and (3) secondary signs and symptoms of breast cancer in young women. This chapter outlines the methods used to search for published literature and the process for selecting published research that would be suitable to include in the literature reviews.

Breast cancer awareness

Search process

Several searches were conducted in order to collect relevant data for a literature review. Table 3.1 outlines the eight searches that were conducted including database name, date the search was conducted, terms used in the search, and the number of articles the search returned.

Table 3.1- Summary of database searches for breast cancer awareness

Search	Database	Date	Terms Used	Number of Returned Articles
A	PubMed	December 7/05	Breast cancer awareness and young women	43
B	EBSCO	December 8/05	Breast cancer awareness and young women	15
C	PubMEd	December 9/05	Breast cancer detection and young women	34
D	PubMed	May 17/06	Breast cancer and awareness	484
E	PubMed	May 18/06	Breast cancer and health education	523
F	EBSCO	May 18/06	Breast cancer and awareness	22
G	EBSCO	May 19/06	Breast cancer and health education	17
H	Cochrane Reviews	May 19/06	Breast cancer	25

The initial search in December 2005 included searches A, B, and C. The terms 'breast cancer awareness' and 'breast cancer detection' were used in combination with 'young women' in the PubMed database. An additional search was conducted using the terms 'breast cancer awareness' and 'young women' was inputted into the EBSCO database.

Additional searches were conducted in May 2006 in order to find any articles that have been published since the initial search and expand the literature. The terms 'breast cancer and awareness' and 'breast cancer and health education' were inputted separately into both the PubMed and EBSCO databases. In addition, a search was conducted in the Cochrane review database using only the phrase 'breast cancer'.

Selection of eligible documents

Once the searches were complete, the selection of eligible documents was performed in order to extract documents that would contribute to meeting the goals and objectives of this report.

Each document was reviewed and a series of questions were asked in order to determine whether the document should remain in the process. The following questions were asked for each document:

1. Is the document focused on breast cancer?
2. Is the document focused on breast cancer and females?
3. Is the document research based and focused on breast cancer awareness?
4. Is the research in the document focused on young women (between the ages of 18 and 29)?
5. Is the article written in the English language?

The questions were asked in the order outlined above. If the answer was no for one of the questions, the document was eliminated. In many cases, especially for question # 4, it was difficult to answer the question because the title and/or abstract did not contain sufficient information. Therefore, the document was still included in the pool of documents considered potentially relevant.

Each document was categorized as either potentially relevant or eliminated. The potential relevant documents were screened through an additional process that involved retrieving the full text article in order to answer the question(s) that could not be determined through the previous screening stage. Once the full text articles were read from the potentially relevant list, it was categorized into relevant document or eliminated document.

The search outlined above, revealed very few articles focusing on young women (18-29 in age) and awareness programs focusing on breast cancer. Therefore, the age criterion was expanded. All documents that were previously omitted because they did not meet the age criteria were reevaluated based on the expanded eligibility criteria. Question #4 outlined above was changed to: Is the research in the document focused on young women between the ages of 16 and 39? The documents were categorized into relevant documents and irrelevant documents. The documents that were deemed relevant continued through the screening process and are outlined in chapter four of this report.

Signs and symptoms of breast cancer

Search process

The searches conducted in order to collect relevant documents for the literature review on signs and symptoms of breast cancer are outlined in Table 3.2. Search A was conducted in December of 2005 and used the terms 'breast cancer detection' and 'young women'. This search revealed 34 documents. Therefore, additional searches were completed to increase the number of potentially relevant documents.

The remaining searches omitted the 'young women' term from the search; however, limits were placed on searches B, C, and D. The limits include English language documents, females, and an age of 13 to 44 years. This age limit was closest to the young women definition of this literature review. In order to retrieve the most recent medical research, a limit was also placed on the publication date of the document. Documents that were published before 1980 were not included in the review.

Table 3.2- Summary of Database Searches for signs and symptoms of breast cancer in young women

Search	Database	Date	Terms Used	Number of Returned Articles
A	PubMed	December 9/05	Breast cancer detection and young women	34
B	PubMed	June 3/06	Detection and breast cancer	239
C	PubMEd	June 4/06	Signs and breast cancer	267
D	PubMEd	June 4/06	Symptoms and breast cancer	376

Selection of eligible documents

The selection of eligible documents consisted of using a set of questions in order to determine the eligibility of a document. Each document was reviewed and a series of questions were asked in order to determine whether the document should remain in the process.

The following questions were asked for each document:

1. Is the document focused on breast cancer?
2. Is the document focused on breast cancer and females?
3. Is the document research based and focused on signs and/or symptoms of breast cancer?
4. Is the research in the document focused on young women (between the ages of 18 and 29)?

Question #3 referred to the signs and symptoms of breast cancer. Many of the documents were eliminated in this category because they referred to signs and symptoms of breast cancer treatments and not the disease. There were few documents categorized as eligible. The documents were reevaluated with expanded age criteria. Therefore, question #4 outlined above was changed to: Is the research in the document focused on young women between the ages of 16 and 39? The documents were categorized into relevant documents and eliminated documents. If the abstract of the document did not contain sufficient information to answer the questions outlined above, the full text article was obtained for confirming the contents of the article.

Secondary signs and symptoms of breast cancer

Search process

The same literature searches were used for the secondary signs and symptoms of breast cancer as signs and symptoms of breast cancer outlined previously. The literature searches were used in this literature review because the same keywords apply. Table 3.2 summarizes the database, date, terms used and number of returned articles. The search process was the same for this literature search as the signs and symptoms of breast cancer. This summary of this process can be found in the signs and symptoms section in this chapter.

Selection of eligible documents

The selection of eligible documents consisted of using a set of questions in order to determine the eligibility of a document. Each document was reviewed and a series one question was asked in order to determine whether the document should remain in the process. However, a number of documents were eliminated in the previous search because the breast cancer,

gender, and age criteria were not met. Therefore, these documents were not revaluated for this literature review.

One question was asked for each document:

1. Is the document research based and contain information on how breast cancer can spread to other areas of the body and outline the signs and symptoms that may occur as a result of the breast cancer spreading to other parts of the body?

RESULTS CHAPTER 4

Introduction

Chapter four outlines the documents deemed relevant for the literature reviews and describes the study characteristics. Both searches are included separately in this chapter and include search results and study characteristics.

Breast cancer awareness

Results of searches for documents

The breast cancer awareness searches summarized in chapter three found a total of 1163 documents. Following the preliminary round of evaluating suitability of the documents, there were a total of 208 documents that were considered potentially relevant. The full text document for each of the 208 documents was retrieved.[1] Each of the full text documents were revaluated to determine if the documents met the criteria outlined in chapter three. Following the revaluation, there were 13 documents that met the criteria and are included in the literature review in this chapter.

Table 4.1 outlines the number of documents eliminated based on the criteria the document did not meet. The majority of documents were eliminated from the literature review because they did not meet the criteria included in question #3: Is the document research based and focused on breast cancer awareness? Approximately one-quarter of the documents were eliminated due to the age criteria. The remaining documents were excluded because they did not meet the breast cancer, gender, or language criteria. Thirteen documents met all of the criteria outlined in chapter three. These documents are included in the literature review.

Table 4.1- Eliminated documents from the breast cancer awareness literature review

Document did not meet criteria for:	**Number of documents eliminated from the review**
Breast cancer	84 (7%)
Females	5 (<1%)
Awareness	734 (64%)
Age	318 (28%)
Language	9 (<1%)

[1] This number includes 18 documents that were not retrieved because of a delay in receiving them from libraries

Study characteristics

One of the objectives of this literature review was to review research focusing on promoting breast cancer awareness in young women; therefore, all thirteen documents were intervention studies. Each of the intervention studies evaluated the impact of a health education program on young women and all 13 documents utilized questionnaires and quantitative analysis to assess the success of the intervention. Many of the research studies conducted a questionnaire before and after the intervention (Vahabi, 2005; Giles et al., 2001; Devi et al., 1998; Ferris et al., 1996; Cromer et al., 1992; Meyerowitz & Chaiken, 1987; and Roberts et al., 1986). The remaining research studies conducted an intervention program that compared results between groups (Sorensen et al., 2004; Fitzgibbon, 2003; Dunn et al., 2001; Craun & Deffenbacker, 1986; Gravell et al., 1985; Cartenson & O'Grady, 1980).

There were a variety of health education intervention programs included in this review. Five of the interventions included a combination of presentations and print material (Giles, 2001; Cromer, 1992; Craun & Deffenbacher, 1986; Roberts et al., 1986; and Gravell et al., 1985), four of the interventions included only print material (Vahabi, 2005; Dunn et al., 2001; Devi et al., 1998; and Ferris et al., 1996), and two of the interventions include only presentations (Fitzgibbon et al., 2003 and Cartenson & O'Grady, 1980). A video and nurse demonstration was the focus of one intervention (Sorensen et al., 2004) and one intervention primarily focused on the impact of prompts (Ferris et al., 1996).

Eleven of the 13 documents intervention studies focused on breast self-examination (Vahabi, 2005; Sorensen et al., 2004; Giles et al., 2001; Devi et al., 1998; Ferris et al., 1996; Cromer et al., 1992; Meyerowitz & Chaiken, 1987; Craun & Deffenbacker, 1986; Roberts et al., 1986; Gravell et al., 1985; Cartenson & O'Grady, 1980). Each of the 11 documents used a variety of intervention programs in order to increase breast cancer awareness. The success of the program was evaluated according to change in behaviour, more specifically change in breast self-examination (BSE) behaviour.

With the exception of two research studies (Cromer et al., 1992 and Roberts et al., 1986), the intervention studies improved BSE practice in young women. Two of the documents studied the effectiveness of prompts on performing BSE in young women (Ferris et al., 1996 and Craun & Deffenbacher, 1986). Both research studies found significant improvement in BSE behaviour as a result of providing prompts to perform the behaviour. Cartenson and O'Grady (1980) did not research prompts; however, the research participants identified they did not complete BSE because they forgot.

Dunn et al. (2001) and Meyerowitz and Chaiken (1987) compared types of messages in print material between groups. Both research studies found that material that contained negative

consequence or threatening messages were more likely to perform BSE than women that received other types of messages in print material.

Three of the documents included in the literature review included measures of knowledge in the results portion of their analysis. Vahabi (2005), Crown and Deffenbacher (1986), and Roberts et al. (1986) found an increase in breast cancer knowledge; however, Vahabi (2005) stated knowledge was still limited in young women following the health education intervention.

One of the 13 research studies was Canadian. Vahabi (2005) conducted research on the effectiveness of a pamphlet using a pre-post study using residents from Toronto, Ontario. Despite the intervention program, the author stated young women still possessed limited knowledge regarding breast cancer. The research conducted by Devi et al. (1998) focused on young women from India. The research presented by Sorensen et al. (2004) and Roberts et al. (1986) was based on participants from Europe and the remaining research studies were conducted in the United States (Fitzgibbon et al., 2003; Dunn et al., 2001; Giles et al., 2001; Ferris et al., 1996; Cromer et al., 1992; Meyerowitz & Chaiken, 1987; Craun & Deffenbacker, 1986; Gravell et al., 1985; and Cartenson & O'Grady, 1980).

Signs and symptoms of breast cancer

Results of searches for documents

The searches outlined in Table 3.2 revealed a total of 916 documents. Following the first round of categorizing documents, 166 articles remained potentially relevant to the literature review for signs and symptoms of breast cancer. The full text document was retrieved for each document in this collection of 166 articles to determine which documents were relevant to the literature review. The final stage of evaluating documents revealed a total of 8 documents suitable to include in the literature review on signs and symptoms of breast cancer.

Table 4.2 identifies the criteria the document did not meet when evaluated for potential eligibility. The majority of documents were eliminated because they did not meet the signs and symptoms criteria. Many of the articles within the signs and symptoms were eliminated because the signs and symptoms referred to a specific treatment for breast cancer such as a drug treatment. The remaining documents did not meet the breast cancer, female, or age criteria. After eliminating the documents which did not meet the criteria, ten documents remained. Possible explanation regarding the low number of eligible documents for this literature review is outlined in chapter five. These documents are outlined in the next section of this chapter.

Table 4.2- Eliminated documents from the signs and symptoms literature review

Document did not meet criteria for:	Number of documents eliminated from the review
Breast cancer	92 (10%)
Females	3 (<1%)
Signs/symptoms	737 (81%)
Age	76 (8%)

Study characteristics

The eight documents that met the eligibility criteria for the signs and symptoms of breast cancer were categorized into two types. The first type of document related to the physical signs and symptoms of breast cancer. The second type of document related to the emotional symptoms of breast cancer.

Physical signs and symptoms of breast cancer

There were five research documents focusing on the physical signs and symptoms of breast cancer in young women. Four of the five research documents based their findings on the analysis of existing data on young women with breast cancer (Vetto et al., 2006; Zadelis & Houssami, 2003; Seltzer, 2001; and Chan et al., 2000). All four documents utilized quantitative methods to statistically verify research findings.

One of the five documents was a discussion paper (Apantaku, 2000). Although this type of paper should be eliminated from the literature review, there were few articles referring to signs and symptoms of young women. Therefore, this document contained data regarding signs and symptoms in young women, which will be helpful in the discussion section of this report.

Three documents focused exclusively on young women (Vetto et al., 2006; Zadelis & Houssami, 2003; and Chan, 2000). All four documents acknowledge breast cancer incidence rates for young women are low compared to older women. Research conducted by Chan et al. (2000) found 93% of women presented symptoms when they were diagnosed. Signs and symptoms of breast cancer may include cysts, solid masses, nipple discharge, and breast pain (Apantaku, 2000). Chan et al. (2000) and Zadelis & Houssami (2003) found that a lump was the most likely sign of breast cancer in young women. Both research documents found between 82% and 83% of young women were symptomatic with breast lumps. Chan et al. (2000) compares detection of breast cancer in young women to older women. The authors state that breast cancer is more likely to be detected in young women due to a lump in the breast whereas breast cancer in older women is more likely to be detected based on a mammogram test. Chan et al. (2000) also state that breast cancer in younger women is most often self-detected.

Seltzer (2001) also noted a lump as an indicator of breast cancer; however, the researcher reported women were more likely to complain of miscellaneous symptoms rather than a lump. Seltzer (2001) did not identify the miscellaneous symptoms of breast cancer. He did include lump, pain, and nipple discharge in his research. Therefore, it is assumed that miscellaneous symptoms included symptoms other than those outlined in his research.

Other signs and symptoms of breast cancer in young women include thickening (Zadelis & Houssami, 2003), nipple discharge (Vetto et al., 2006 and Zadelis & Houssami, 2003), and breast pain (Zadelis & Houssami, 2003). Zadelis & Houssami (2003) included breast change in their research and categorized this symptom with nipple discharge.

One Canadian study was included in the literature review. Chan et al. (2000) reviewed over 1000 cases of breast cancer in women younger up to the age of 35. Data was analyzed over a 30 year time period from a single institution located in Canada. In addition to signs and symptoms of breast cancer, the article focuses on clinical features and treatment pattern of relapse and outcome, and family history.

Data for the remaining documents were based on participants from developed countries. Three of the documents based their findings on participants from the United States (Vetto et al., 2006; Seltzer, 2001; and Apantaku, 2000). One of the documents based their findings on data from Australian participants (Zadelis & Houssami, 2003).

Secondary signs and symptoms of breast cancer

Results of searches for documents

A total of 916 documents were retrieved from the literature searches. Twelve articles remained potentially relevant following the first round of categorizing documents. The full text document was retrieved for each of the 12 documents. The full text document was utilized to extract more information to determine if the document met the eligibility criteria to the literature review. No documents were found that met all of the eligibility criteria.

DISCUSSION CHAPTER 5

Introduction

The purpose of this chapter is to discuss the results reported in chapter four. Discussion regarding the objectives of this report is outlined in the following sections of this chapter. The discussion includes the challenges in achieving the objectives outlined in chapter two, specific limits of each objective and noteworthy findings.

The final section of this chapter describes the general limitations for all three literature reviews. For the most part, this chapter separates findings according to each literature review. However, the next chapter will combine the results and discussion of each literature review to make recommendations and conclusions.

Achieving the objectives of the literature review

Type of breast cancer health promotion campaigns that have been used to increase awareness in young women

There have been numerous research studies targeting interventions to improve breast cancer awareness; however, the majority of these research studies are focused on older women. A potential explanation for the lack of attention of intervention programs on young women may be a result of the incidence rates. Older women are more likely to be diagnosed with breast cancer; therefore, health education program research has concentrated on this population Despite the fact younger women are less likely to be diagnosed with cancer, it is still important for this population to be aware of the risk factors, signs and symptoms of breast cancer. After conducting this literature review, it is evident more research is needed that focuses on intervention programs and young women.

The 13 documents that were included in this literature review contained a variety of intervention programs that included presentations, print material, video and prompts. Several of the research studies implemented multiple interventions. Most of the documents included in this review focused on BSE, which is a method used to detect breast cancer. The prominence of this topic could be a result of the importance of young women self-detecting breast cancer. Younger women are less likely to have mammogram than older women and rely more on detecting breast cancer through measures other than a mammogram. Therefore,

it is imperative young women are aware of proper BSE technique to improve the rate of early detection.

The interventions utilized in the research studies for this literature review were relatively inexpensive. The intervention programs did not include methods such as television, radio, or internet. Although campaigns that utilize this type of medium exist, no published research focusing on the effects of these campaigns on young women was returned in the literature searches. A potential explanation for lack of research evaluating these types of campaigns could be a result of the expense these types of intervention programs often incur.

Discover successful breast cancer health promotion campaigns in young women

Assessing success in an intervention program can be difficult. The goal of a health intervention program often includes a behaviour change to improve the health of an individual(s). Therefore, to measure the success of a health intervention program would include the assessing the change in behaviour before and after a program. The published literature outlined in this review primarily utilized BSE behaviour to measurement the success of a program. However, assessing the reasons for the behaviour change is complex.

The theory of reasoned action was developed by Fishbein and Ajzen in 1975 and then was later developed into the theory of planned behaviour in 1980. This theory postulates behaviour is a results of a variety of factors including knowledge, attitude, subjective norms, perceived behavioural control, and behavioural intention (Hrubes et al., 2001). Relating the theory of planned behavior with the findings of this literature review, it can be assumed that the intervention programs were successful in improving BSE behaviour because there was a change in knowledge, attitude, subjective norms, perceived behavioural control, and/or behavioural intention in the research participants. Thus, the program was successful; however, the reason the program was successful remains unclear.

Prompting BSE behaviour was the focus of the research in two documents included in this literature review. Both research studies report significant success and positive feedback from participants. The research conducted by Ferris et al. (1996) involved creating a prompt placed on birth control pills in order for research participants to perform BSE during the appropriate time frame. Gravell et al., (1985) used wallet stickers and pamphlets as prompts for performing BSE. Interestingly, of the remaining BSE research documents, only Cartenson and O'Grady (1980) asked research participants to identify reasons for not performing BSE. Many of the research participants indicated they forgot to perform BSE rather than they did not believe it was important. Therefore, providing a prompt would improve BSE behaviour.

Each study included in this literature review was unique. Thus, it is difficult determining the type of program that is most successful. None of the research studies focused specifically on comparing types of intervention programs such as printed material versus presentation. However, types of successful messaging in print material was compared. Both documents that focused on message type found material which contain negative consequence or threatening message were more likely to perform BSE than women that received other types of messages in print material.

Although relatively few documents were included in this literature review, every research study included in the literature review on breast cancer awareness and young women found an improvement in either behaviour or knowledge. Therefore, it is evident that health education campaigns can be an effective means generating awareness in young women. However, some programs may be more successful depending on the types of material and message conveyed. A health education campaign should be well planned in order to maximize the effect on the target population.

Confirm known signs and symptoms of breast cancer in young women

An extensive literature search was conducted to collect data focusing on signs and symptoms of breast cancer. The searches revealed few relevant documents; however, the relevant documents contain essential information for the literature reviews. In particular, the research conducted by Chan et al. (2000) contains principal information regarding signs and symptoms for women 35 years of age and young. In addition, this research was from a Canadian Institute.

A breast lump appeared to be the most common reported symptom of breast cancer for young women. Symptoms also included emotional symptoms of being diagnosed with breast cancer. Although the emotional effect of being diagnosed with breast cancer is not a physical symptom of breast cancer, it is important to take this possible effect into consideration.

The literature search revealed that many of the recent documents (within the last 10 years) tend to focus on the symptoms of breast cancer treatment rather than the disease. The references of the published documents collected for the literature review were examined. There were a number of references focusing on signs and symptoms of young women. However, the majority of references were more than 15 years old. Although a formal analysis was not completed comparing the date and type of research, it appears current breast cancer research tend to focus more on the treatment symptoms rather than the symptoms of the disease.

The literature review that focused on secondary signs and symptoms of breast cancer in young women revealed no documents that met the eligibility criteria. This is not surprising given that there were relatively few documents focused on direct signs and symptoms of breast cancer in young women.

A potential explanation for this observation may involve the amount of research on signs and symptoms of breast cancer and the advancement of breast cancer treatment. It may be possible that signs and symptoms of breast cancer have been researched adequately and researchers prefer to focus on more advanced research, including breast cancer treatment.

Despite the potential relationship between date and research type outlined previously, it is evident more current research is needed regarding signs and symptoms of breast cancer in young women. Research has identified that young women are more likely to be self-detected compared to older women (Chan et al., 2000). Therefore, it is important to confirm the signs and symptoms of breast cancer in young women to ensure they are aware of relevant signs and symptoms to detect breast cancer.

Limitations

The most significant challenge in conducting all three literature reviews was collecting documents with young women between the ages of 18 and 29. Very few documents were retrieved with this age group; therefore, the age criteria were expanded from 16 to 39 for all of the literature reviews. Research that included this age cohort within the research was utilized in the literature review as long as the oldest participant was not older than 49 years of age.

Although more documents would be classified as relevant if the age limitation was removed, the findings may not have been relevant. Many documents compared young women to older women and found a difference in results. Thus, focusing only on younger women assisted in ensuring data findings were most relevant.

A limitation specific to the breast cancer awareness literature review is the number of full text documents that were not retrieved within the time frame of producing this report. There were 18 documents that were categorized as potentially relevant; however, the full text articles was required to determine if the research was in fact relevant to the breast cancer awareness literature review. These documents could contain relevant research findings; however, without the full text, the documents could not be included in this review.

A second limitation of the breast cancer awareness literature review involves the success of BSE health education intervention programs. Although the majority of research studies indicated an improvement in BSE behaviour in young women, the studies did not assess the

behaviour in the long-term (beyond one year). Thus, it can be stated that the intervention programs worked in the short-term but the long-term effects are undetermined.

RECOMMENDATIONS AND CONCLUSIONS CHAPTER 6

Introduction

Health education intervention programs can be effective at increasing awareness. This chapter outlines recommendations and conclusions based on the literature included in the review. The recommendations and conclusions are focused on achieving the primary goal of this report, which was to determine successful health promotion awareness projects targeting breast cancer and young women. This information is needed for a project aimed at increasing early detection of breast cancer in young women. It is important to keep in mind that the recommendations and conclusions outlined in this chapter are based on relatively few research studies.

Recommendations

Based on the published research outlined in the literature reviews, the following recommendations are outlined. These recommendations will assist in developing a successful health promotion awareness campaign that focuses on early detection of breast cancer in young women.

(1) *Emphasize the importance of performing breast self-examination in young women*

Mammograms are conducted more often in older women compared to young women. Thus, breast cancer is more likely to be self-detected in young women. In addition, research has demonstrated that lumps in the breast are the most likely sign of breast cancer in young women. These findings emphasize the importance of promoting young women to perform BSE to detect breast lumps.

(2) *Incorporate prompts into a health education campaign*

Although only two research studies focused on utilizing prompts to improve breast self-examination behaviour, the findings of these research studies identified a significant improvement in young women performing breast self-examination. Forgetfulness was the primary reason women did not perform breast self-examination; therefore, using prompts may increase breast self-examination behaviour.

(3) *Incorporate the negative consequences of not conducting breast self-examination*

Research has found negative consequences or threatening messages effective at improving breast self-examination behaviour than other types of messages. Although only two documents focused on message types, both found similar results. This recommendation does

not suggest an entirely negative consequence or threatening messages. However, a portion of the campaign may be effective if a portion of it included this type of message.

(4) *Include breast lumps, thickening, nipple discharge, breast change, and breast pain in awareness campaign*

There are a number of signs and symptoms women should be aware of in order to self-detect breast cancer. Research has found young women have reported breast lumps, thickening, nipple discharge, breast change, and breast pain as signs of breast cancer. Young women should be aware of these signs in order to assist in self-detecting breast cancer.

Conclusions

Although an extensive amount of literature does not exist focusing on young women and breast cancer, the research studies included in the literature reviews outlined in this report provide a foundation for beginning to understand the relationship between breast cancer and young women. The recommendations outlined above are based on a limited quantity of research studies; however, the research studies focus specifically on young women.

Improving early detection of breast cancer can assist in reducing breast cancer deaths in young women. In order to improve early detection rates in young women, this target population must be aware of the signs and symptoms of breast cancer in order to self-detect this disease. Breast cancer can be effectively treated if detected early and an effective health education campaign can help reduce the number of deaths due to breast cancer.

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