

TEAM SHAN COMMUNITY PROJECT

Literature Review

Updated Breast Cancer in Young Women

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Background

A literature review was conducted in 2006 focusing on breast cancer and young women. The purpose of this report is to review the literature published since the completion of the literature review completed in 2006. This literature review outlines the current published literature as well as documents not included in the 2006 literature review due to time restrictions.

Breast Cancer in Younger Women

There are many statistics that are focused on breast cancer and young women. The literature review conducted in 2006 outlines many of the trends and statistics of young women and breast cancer. The information outlined below was published since the literature review conducted in 2006.

In Ontario the crude incidence rate of females ages 15 to 29 between 1999 and 2003 being diagnosed with breast cancer was 2.77 per 100 000 (Cancer Care Ontario, 2005).

The incidence rate for women of the same age group was approximately 33 per year and the crude mortality rate of females diagnosed with breast cancer ages 15 to 29 between 1999 and 2003 was approximately 3 per year (Cancer Care Ontario, 2006).

The statistics for women between the ages of 15 to 39 were higher. In Ontario the crude incidence rate of females ages 15 to 39 between 1999 and 2003 being diagnosed with breast cancer was 19.09 per 100 000 (Cancer Care Ontario, 2005). The incidence rate for women in this age group was approximately 409 per year and the crude mortality rate of females diagnosed with breast cancer between 1999 and 2003 was approximately 59 per year (Cancer Care Ontario, 2006).

The US National Cancer Institute published a SEER report for 1975-2000. The data suggests that cancer rates among 15-29 year olds has increased steadily over the last twenty five years (National Cancer Institute, 2007). There has also been an increase in the number of breast cancer cases diagnosed in adolescent and young adult females (National Cancer Institute, 2007). The authors state that females between the age of 15 and 29 have a lower survival rate compared to older women. Younger women also tend to have a more aggressive form of breast cancer (National Cancer Institute, 2007).

Toward Kinder Care: Up front (Trussler, 2007) is a report that focuses on Canadian women's experiences regarding breast cancer. The report included a literature review and qualitative research on a variety of breast cancer issues. A number of observations, conclusions and recommendations were made based on a range of methods for collecting data. Trussler (2007) identified that knowledge regarding breast cancer could be improved. The recommendations for an awareness campaign included that breast cancer education should focus on signs and symptoms of breast cancer and risk reduction options for women. Trussler (2007) also states that campaigns should be tailored towards specific age groups and integrated into schools. The author also recommends that one of the priorities for health care providers should be focused on knowledge and supportive care practices of breast cancer in young women.

Outline of the report

The purpose of this report is to update the findings of two literature reviews conducted during 2006. This literature review will focus on the literature published during 2006 and 2007 and that was not included in the previous literature review. This literature review also includes articles that were requested but not received prior to writing the first literature review. A reiteration of the two literature reviews are outlined below.

The first literature review focused on programs aimed at increasing the awareness of breast cancer in young women. This literature review will be referred to as 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 as well as the secondary signs and symptoms 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 objectives for each literature review are 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 results from the literature reviews. 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. The recommendations and conclusions are based on results from this literature review as well as the literature review conducted in 2006.

Goals

The primary goal of this report was to update the literature review completed in 2006. The overall 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 39. The first literature review originally focused on 18 to 29 year old females. However, it was evident part way through the previous literature review that the age range needed to be expanded to 16 to 39 year old females.

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

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 and (2) signs and symptoms of breast cancer in young women, including 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.

The same databases and procedures were completed for the update literature review with the exception of the EBSCO databases. This database was not accessible to the literature review authors, thus, was eliminated from the second literature review.

Breast cancer awareness

Search process

Several searches were conducted in order to collect relevant data for a literature review. Table 3.1 outlines the 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	July 5/07	Breast cancer awareness and young women	7
B	PubMED	July 5/07	Breast cancer detection and young women	26
C	PubMed	July 5/07	Breast cancer and awareness	135
D	PubMed	July 5/07	Breast cancer and health education	221
E	Cochrane Reviews	July 5/07	Breast cancer	25

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 39)?
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.

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.

The limits include English language documents and the terms used were to be located in the title and/or abstract. The past 13 months needed to be included in the literature review; however, two years was the closest limit. Thus, all articles were reviewed that were published after the last literature review was completed.

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

Search	Database	Date	Terms Used	Number of Articles
A	PubMed	July 11/07	Breast cancer detection and young women	29
B	PubMed	July 11/07	Detection and breast cancer	677
C	PubMED	July 11/07	Signs and breast cancer	80
D	PubMED	June 4/06	Symptoms and breast cancer	263

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 (including secondary signs and symptoms)?
4. Is the research in the document focused on young women (between the ages of 18 and 39)?

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. 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.

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 414 documents. The full text was retrieved for all potentially relevant documents¹. One new document met the criteria outlined in the methods section of this literature review. However, three documents were made available that were not included in the first literature review due to the time it took to receive the documents. Thus, this literature review will include a total of four new documents.

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 four documents were intervention studies. All of the intervention studies evaluated the impact of a health education program on young women (Chan et al., 2007; Howell et al., 2002; Jabaja et al., 2000; and Chen et al., 1989). Pre and post questionnaires were used to assess awareness levels in three of the documents (Chan et al., 2007; Howell et al., 2002; and Jabaja et al., 2000). Chen et al. (1989) researched and assessed behaviour change as a result of knowledge gained during a university course. The measure of assessment included a final project in the course.

A variety of health education intervention programs were included in the documents. The intervention strategies are outlined in Table 4.1. This table also identifies the citizenship of the sample group.

¹ Three documents were unable to be retrieved prior to writing this literature review

Table 4.1- Intervention types and citizenship of sample group

Authors	Interventions implemented	Country
Chan et al., 2007	Health van placed around Hong Kong with health workers, Breast Self Examination demonstration, video, CD Rom	Hong Kong
Howell et al., 2002	CD Rom, Video, Brochure, Lecture	USA
Jabaja et al., 2000	Computer based interactive soap opera	USA
Chen et al., 1989	University course and final project	USA

All of the authors concluded that breast cancer awareness was improved. Three of the health intervention strategies based this conclusion on the analysis of the questionnaire implemented prior to the intervention compared to the questionnaire implemented following the intervention (Chan et al., 2007; Howell et al., 2002; and Jabaja et al., 2000). Chen et al. (1989) based their conclusions on the change of behaviour of university students following the university course. The most successful behaviour change reported by the sample group for breast cancers was breast self examinations (BSE). Chan et al. (2007) also focused on improving BSE behaviour. The researchers found the health van that provided citizens with a video, CD Rom, and demonstration increased the BSE behaviour.

One of the objectives of the research conducted by Jibaja (2000) was to measure the effectiveness of the interactive soap opera on Hispanic women. The authors concluded language can be a barrier; however, this method did improve breast cancer screening awareness in young women.

Howell et al., (2002) and Chen et al. (1989) focused on increasing awareness of university and college students. As outlined previously, Chen et al. (1989) implemented a university course that provided information to the students and measure behaviour change. Howell et al. (2002) measured the increase in awareness of breast cancer in college women and compared types of media. The researchers found that the college students preferred the lecture or CD-ROM. The brochure was preferred third followed by a video. The researchers indicated that students favoured the CD-ROM because it allowed the ability to choose the topic they were interested in and the lecture because it was more interactive (the ability to ask questions). Specific statements about the types of media are outlined in Table 4.2. There were several specific conclusions Howell et al. (2002) identified and are as follows:

- Portray real women whom they can identify with
- Include diverse ethnicity
- Use non-scientific terms

- Education tools should be free of charge
- Combination of tools more effective
- Include phone number or website on material
- Include materials at a variety of places on campus (health booths, classrooms, doctor offices)

It is important to note that all of the tools were found to increase awareness; however, some of the college students preferred one type of media over the other.

Table 4.2- Most Frequent Positive and Negative Statements about Education Tools

(Howell et al., 2002, pg. 76)

Tools	Positive Statements	Negative Statements
CD-ROM	<ul style="list-style-type: none"> ▪ Ability to choose topic ▪ Audio plus visual reinforced learning ▪ Can go back and review information 	<ul style="list-style-type: none"> ▪ Design of CD-ROM (slow, lots of clicking, difficult to navigate) ▪ Use may be difficult if unfamiliar with CD-ROM/computer ▪ Student tire of using computers too much
Video	<ul style="list-style-type: none"> ▪ Real people and stories portrayed ▪ Much information but still understandable ▪ Easy to use 	<ul style="list-style-type: none"> ▪ Can not relate to speakers (male doctor and no younger women) ▪ View passively, easy to become distracted ▪ Already too much TV exposure inside and outside school
Brochure	<ul style="list-style-type: none"> ▪ Real people easier to relate to ▪ Can go back and review information ▪ Convenient for time and mobility 	<ul style="list-style-type: none"> ▪ Student tired of reading books and brochures ▪ Passive form of learning, does not grab attention ▪ Not enough age diversity represented
Lecture	<ul style="list-style-type: none"> ▪ Quick answers to personal questions ▪ Informative but simple ▪ Person talking to me, one-on-one 	<ul style="list-style-type: none"> ▪ Content (style seemed rushed, vocabulary not understood) ▪ Students see a lot of lectures already, would not co me to another ▪ Easy to get distracted

Signs and symptoms of breast cancer

Results of searches for documents

The searches outlined in Table 3.2 revealed a total of 1039 documents. The full text was retrieved for all potentially relevant documents. Three new documents met the criteria outlined in the methods section of this literature review. In addition, five documents were made available that were not included in the first literature review due to the time it took to receive the documents. Thus, this literature review focusing on signs and symptoms of breast cancer in young women includes a total of eight new documents.

Study characteristics

Seven of the eight documents utilized quantitative results to support their conclusions (Bouchardy et al., 2007; Fernandopulle et al., 2006; Maurice et al., 2006; Zabicki et al., 2006; Colleoni et al., 2002; Gajdos et al., 2000; and Park et al., 2000). Mintzer et al. (2006) describe one case study of young patient and her symptoms. 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 of the research locations were located in the USA (Mintzer et al., 2006; Zabicki et al., 2006; and Gajdos et al., 2000), three were located in Europe (Bouchardy et al., 2007; Maurice et al., 2006; and Colleoni et al., 2002), one was located in Singapore (Fernandopulle et al., 2006) and one was located in Korea (Park et al., 2000).

Six of the eight documents made conclusions regarding tumour size (Bouchardy et al., 2007; Fernandopulle et al., 2006; Maurice et al., 2006; 2006; Zabicki et al., 2006; Colleoni et al., 2002; and Gajdos et al., 2000). Three of the six documents that make conclusions regarding size of tumours and age reported younger women tended to have larger tumours (Zabicki et al., 2006; Colleoni et al., 2002; and Gajdos et al., 2000). Although Mintzer et al. (2006) did not research tumour size, the authors report that findings often indicate younger women have large tumours. Zabicki et al. (2006) reported that tumour size in both younger women and older women has decreased overtime, which the authors attribute to earlier detection. However, the authors do state that younger women tend to have larger tumours compared to older women. Two of the documents found that younger women tended to have smaller tumours (Fernandopulle et al., 2006 and Maurice et al., 2006). However, the researchers that did comment on the aggressiveness of breast cancer concur that younger women tend to be diagnosed with a more aggressive type of breast cancer (Fernandopulle et al., 2006; Mintzer et al., 2006; 2006; Zabicki et al., 2006; Colleoni et al., 2002; and Gajdos et al., 2000).

One of the findings in the documents indicated that 72% of women were diagnosed with breast cancer as a result of finding a lump because of breast self-examination (Bouchardy et

al., 2007). The same researchers indicated that 20% of the women were diagnosed with breast cancer as a result of other symptoms and the remaining 9% were diagnosed with breast cancer as a result of screening. The authors did not indicate the other symptoms that the patients presented.

A lump was the primary symptom noted in the new documents attained for this updated literature review. No other physical symptoms of breast cancer were noted in the new documents attained for the updated literature review.

Introduction

The purpose of this chapter is to discuss the results reported in chapter four. It is important to note that this discussion is based on the new documents attained for the updated literature review, thus represent one year of research. 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 of the 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. The final chapter will also include findings and discussion from the previous literature review conducted in 2006.

Achieving the objectives of the literature review**Type of breast cancer health promotion campaigns that have been used to increase awareness in young women**

The published literature indicated a variety of media types were used to promote breast cancer awareness. The types of health promotion campaigns include using a van to promote BSE through demonstration, video and CD-ROM. Other campaigns have used brochure, lecture, interactive soap opera, and university course.

Each of the health promotion campaigns provided knowledge to the sample group in order to increase awareness about breast cancer. Numerous breast cancer health promotion campaigns were published in the last year; however, only one of the documents focused on young women². This finding can be an indication of the lack of research focusing on breast cancer awareness and young women. As indicated in the previous review, a lack of published research focusing on young women may be a result of the incidence rate; older women are more likely to be diagnosed with breast cancer. However, it is still imperative for younger women to be aware of the signs, symptoms, and risks of breast cancer.

² Three of the four documents included in this literature were published prior to 2003 and would have been part of the previous literature if they were retrieved prior to the completion of the previous review

Discover successful breast cancer health promotion campaigns in young women

Each of the health promotion campaigns focusing on improving awareness of breast cancer in young women was successful. Each of the documents reported that women were more aware of breast cancer issues following the health promotion campaign. Thus, it can be argued that health promotion campaigns will improve the awareness level of young women. However, it is most important to identify the type of health promotion campaign that is more effective at improving awareness level of breast cancer issues.

Each of the studies included in this literature review were unique, thus, it is difficult to compare between strategies. Several of the documents included a comparison between media types. Howell et al. (2002) compared a CD-ROM, video, brochure, and lecture. The researchers found the lecture and CD-ROM to be favoured by the sample group. As outlined in outlined in Table 4.2, one of the reasons these two types of delivering a message were preferred because they were more interactive.

Two of the published documents utilized a CD-ROM and found this to be a successful technique. Arguably, a CD-ROM can be comparable to an internet website. None of the health promotion campaigns included an evaluation of an internet website; however, the advantages of a CD-ROM would be similar to that of an internet website. With the technology age advancing, future publications may include the effectiveness of internet websites for promoting breast cancer.

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

The researched signs and symptoms of breast cancer were minimal in the research retrieved for this literature review. A lump was the only specific symptom indicated by the research. The research tended to report that a lump was the most likely sign in younger women and was most often found as a result of performing BSE (Bouchardy et al., 2007). Thus, these finding indicated that the breast cancer in young women may have gone undetected for a length of time if the women did not perform BSE.

Researchers found opposing results regarding the size of lumps found in breast cancer patients. Research has found younger women had larger lumps than older women; however, the reverse has also been indicated.

All of the published literature retrieved for this literature review that made conclusions on the type of breast cancer young women are diagnosed with concur that younger women tend to be diagnosed with a more aggressive type of breast cancer.

It is evident that current literature focused on the aggression and size of a tumour of breast cancer patients. However, research demonstrates that other symptoms are often presented in breast cancer patients. Thus, more research is needed focusing on other signs and symptoms of breast cancer in young women.

Limitations

This literature review included documents published between the time the 2006 literature review was completed and this current literature review. Although this is the most current published literature focusing on young women and breast cancer, a small time frame may be biased depending if any trends are focused on for published research. In addition, several documents were included in this literature review that were not available at the time of the literature review published in 2006. This literature review does not represent a current perspective of research published on breast cancer and young women. Rather, this literature represents an updated version of the literature review conducted in 2006.

The most significant challenge in conducting both 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 both 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.

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 three 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.

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.

This section of the literature review combines the findings and discussion of the literature review outlined above as well as the findings and discussion of the literature review conducted in 2006 (see Suffel, 2006). There is limited research available on breast cancer in young women and the recommendations and conclusions outlined in this chapter are based on the available research studies. A summary is also provided under Conclusions section of this report.

Recommendations

Based on the published research outlined in both 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 by 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. The research has also identified that young women were most likely to be aware of a breast cancer symptom as a result of performing BSE.

(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 young women that the audience can relate to and implement interactive media to promote awareness*

Although this recommendation is based on one research document, this research was the only research retrieved that compared types of media among college students and was published within the last five years. The research demonstrated women preferred methods that were more interactive and that they had some control in what information they were provided. In addition, young women should be included in the campaign as the target audience would relate more to the message.

(5) *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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