

Adeliina Korhonen  
Jumi Akindipe  
Sarah Kanyingi

# Methods of Patient Education on Breast Cancer Patients

-Post treatment pain

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<p>Patient education to breast cancer patients on post treatment pain is important since a large number of patients experience this pain. With today's shorter hospital stays effective patient education is necessary. The purpose of this final project was to describe different methods of patient education used among patients with post breast cancer treatment pain. The aim of this final project was to improve patient education for this group of patients.</p> <p>Principles of literature review were applied in our final project. The databases used were CINAHL and Medline. Content analysis was used to systematically analyze the seven articles found in the data base search in order to answer the study question.</p> <p>The results showed internet and computer based patient education, verbal patient education, support group patient education, telephone patient education and written patient education to be the methods of patient education used to educate breast cancer patients on post treatment pain. Internet and computer based patient education was highly researched and a preferred method by many patients.</p> <p>The results received in this work could be used in nursing education to teach new nurses to make use of various patient education methods in their work directly after graduation. The results can also be used to encourage nurses already in the field to utilize different patient education methods while also improving nurses' knowledge of currently available patient education methods.</p>	
Keywords	breast cancer, post treatment pain, patient education

Kirjoittajat Työn nimi	Adeliina Korhonen, Jumi Akindipe, Sarah Kanyingi Rintasyöpää sairastavien potilaiden kivunhoidon ohjaus toimenpiteen jälkeen
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<p>Rintasyöpähoidot aiheuttavat useimmille potilaille kipua ja siksi potilaiden on tärkeää saada kivun hoitoon ohjausta. Tehokas potilasohjaus on tarpeellista myös lyhyiden sairaalas- saolajaksojen vuoksi. Tämän työn tarkoituksena on kuvata erilaisia potilasohjauksen me- netelmiä koskien rintasyöpähoidon jälkeisiä kipuja. Tavoitteena on parantaa tämän potilas- ryhmän potilasohjausta.</p> <p>Tässä työssä aikaisempaa tutkimustietoa haettiin CINAHL ja Medline tietokannoista. Vali- tut artikkelit (n = 7) analysoitiin sisällönanalyysin periaatteiden mukaisesti etsimällä vasta- usta tutkimuskysymykseen.</p> <p>Tulokset osoittivat, että internet- ja tietokonepohjainen potilasohjaus, suullinen potilasohja- us, tukiryhmäohjaus, puhelinohjaus ja kirjallinen potilasohjaus ovat menetelmiä, joita käy- tetään rintasyöpäpotilaiden ohjauksessa hoidon jälkeen. Internetpohjainen potilasohjausta oli tutkittu eniten ja monet potilaat kokivat tämän menetelmän hyväksi. Tämän työn tuloksia voidaan käyttää esimerkiksi sairaanhoitajakoulutuksessa opetettaes- sa potilasohjausmenetelmiä. Tuloksia voidaan hyödyntää myös käytännön hoitotyössä.</p>	
Avainsanat	rintasyöpä, rintasyöpähoidon jälkeisiä kipuja, potilasohjaus

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## 1 Introduction

There were 4677 newly diagnosed breast cancer patients in the year 2010 in Finland. With improved breast cancer treatment, prognosis is good with 90 % of breast cancer patients living beyond five years. (Vehmanen 2012.) Breast cancer treatment however, has some side effects, one among them being pain. Chronic neuropathic pain affects between 20 % to 50 % of women after breast cancer treatment. (Bokhari & Sawatzky 2009).

Following breast cancer treatment, discomfort such as pain has been reported according to a number of studies (Paskett & Stark 2007; Rawson & Miller 2012). These symptoms however, in some cases affect the quality of life of the patient. Such complications are lymphoedema, pain due to urogenital and vaginal atrophy, joint and muscular pain, and “cording” which can contribute to chronic pain. (Rawson & Miller 2012.)

With the existence of different forms of treatment, it is indicated that patients feel more satisfied and obtain better health outcomes when they receive good information directly from their health care professionals, such as nurses (Bender et al. 2008). It has been suggested, that providing patient education has demonstrated successful health behavioural change in areas such as reduction of pain, taking of medications and adhering to instructions amongst other things. Patient education involves more than simply telling people what to do or giving them an instructional pamphlet. Every patient is different, therefore to promote effective patient education the nurse has to consider their patient as an individual as well as why they are providing such patient education. (United States Department of Health and Human Services Office of Public Health and Science 1989.)

One effective preventative measure is informing a patient of the risk for developing post treatment pain before treatment even begins to take place. This consists of describing to the patient what this pain is, the symptoms and the risks that could cause neuropathic pain. A nurse should also be able to identify patients who may be prone to such pain and the symptoms involved. This can be done by making a physical assessment of the patient’s present and past state. (Bokhari & Sawatzky 2009.) The purpose of this

final project is to describe different methods of patient education used among patients with post breast cancer treatment pain.

## **2 Breast cancer, post treatment pain and patient education**

This chapter discusses the key concepts associated with our final project. It discusses the key concepts: breast cancer as well as breast cancer statistics, post treatment pain and patient education.

### **2.1 Breast cancer**

Breast cancer is defined as a malignant tumor in a breast (Adams et al. 2007: 38). After breast cancer diagnosis, breast cancer treatment usually follows, and after the treatment, patients are due for a follow up program which is done to detect recurrence and complications that may have arisen from treatment. Also check ups are done to offer support to patients as well as patient education in order to maintain their quality of life in the best possible way. (van Hezewijk et al. 2011.) Various studies have shown that due to better therapeutic strategies, the survivors of breast cancer have increased over the years. With better treatment results, the need for regular visits to healthcare professionals have been cut down, which as a result has led to improper evaluation of complications and default in the quality of patient education given to patients. (van Hezewijk et al. 2011; Ryhänen, Siekkinen, Rankinen, Korvenranta & Leino-Kilpi 2010.)

### **2.2 Statistics on breast cancer**

The incidence of breast cancer has been reported to be higher in developed regions of the world, about 80 per 100,000 persons. Fewer incidences are reported in developing regions, about 30 per 100,000 cases. While reported cases are increasing, the recorded mortality rate is relatively less, approximately 6–23 per 100,000 due to the more favourable survival of breast cancer in developed regions. Breast cancer is so far the most common cancer in women, comprising 23% of all female cancers, it ranks second when both sexes are considered. More than half of all cases occur in industrialized countries, about 361,000 in Europe (27.3% of cancers in women) and 230,000 in North America (31.3%). Although incidences are more modest in Eastern Europe, South

America, southern Africa, and western Asia, breast cancer is still the most common cancer of women in these regions. In contrast, low rates (less than 30 per 100,000) are found in most African and Asian populations, although rates of breast cancer are increasing. The prognosis of breast cancer is generally good, therefore, breast cancer ranks as the fifth cause of death from cancer when compared to the mortality rate of other cancers. (Parkin & Fernández 2006.)

### 2.3 Post treatment pain

Pain as a result of breast cancer treatment has been reported in different literature and is noted to be induced in a number of ways which can add to a patient's fear and distress after treatment is completed (Paskett & Stark 2007; Rawson & Miller 2012). Breast cancer treatments may include procedures such as radical mastectomy surgery, modified radical mastectomy, lumpectomy, chemotherapy and/or radiation therapy. Cancer treatment varies depending on the diagnoses and the extent of metastasis as well as the opinion of the physician. (Rawson & Miller 2012.)

Pain is a common symptom in breast cancer patients. However, nurses need to understand the patient's experience of pain in order to provide good pain management. A nurse who is present and supportive makes the patient more tolerable to pain. (Rustoen, Gaardsrud, Leegaard & Wahl 2008.) Furthermore, there is a need for nurses to give information and share knowledge to patients who are experiencing pain due to breast cancer. When pain is not managed properly, it is uncomfortable and reminds the patients of the disease all the time. Also, untreated acute pain may lead to chronic pain. (Rawson & Miller 2012.)

As a high percentage of breast cancer patients experience pain (52-60%), there is a significant need for nurses to be educated on how to deliver patient education and knowledge about pain to patients (Rawson & Miller 2012). Nurses play a key role in the care of patients because nurses are present all the time with regards to in-patient care. Moreover, when patients request pain relief medication, they also need communication and pain education from nurses as to causes and effect of pain. Nurses need to be holistic when treating patients experiencing pain. (Simonsen-Rehn, Sarvimäki & Benkö 2000.)

There are possible solutions for post-surgical pain in breast cancer patients. These treatments could be in many forms, such as pain relief medicines such as non-steroidal anti-inflammatory drugs in tablet or topical form, administration of low-dose antidepressants and arm and shoulder exercises. In other cases, treatments could also include referral to physiotherapy and a pain clinic for specialist assessment and treatment. Such treatments may include different combinations of drugs listed and/or corticosteroid injections around nerves or into joints. (Rawson & Miller 2012.) Even with the existence of all these forms of treatment, research indicates that patients experience better satisfaction and obtain better health outcomes when they receive good patient education directly from their health care professionals (Bender et al. 2008).

#### 2.4 Patient education

Patient education is defined as any set of planned, educational activities designed to improve patient's health behavior, health status, or both (Lorig 2001: 13). Providing the patient with significant amounts of information initially when neuropathic pain begins, has proven to have helped patient's suffering. This simply means the more information given, the better the patient understands their pain. Furthermore, it is important to inform the patient that pain is not a sign that the cancer is back in remission, but instead a negative effect from the treatment. This piece of information gives relief and help reduce stress levels which could hinder the patient from recovering. (Davis 2006.)

The importance of informing the patient about the signs and symptoms of post-treatment pain is so that the patient is able to recognize the symptom of pain and thereby report it to healthcare professionals. The earlier the treatment of pain, the better the outcome. The symptoms and signs of neuropathic pain differ and have been described as numbness, pins and needles, burning, and stabbing, (Boureau, Doubrere & Luu 1990) throbbing, unpredictable, lightning-like, sharp, shooting, scalding, and aching pain (Davis 2006).

The improvement of health care services and treatment options have significantly resulted in shorter hospital stays, hence patients have very little time to verbally communicate with healthcare professionals (Friedman, Cosby, Boyko, Hatton-Bauer & Turnbull 2011). It is often essential that the patient gets quality information as regards their treatment and possible complications. The ultimate goal of patient education is to empower patients to make decisions and participate in their own care. Health profes-



sionals can only facilitate the patient by empowering them through using patient education methods. (Ryhänen et al. 2010.)

### **3 Purpose, aim and the study question**

The purpose of this final project was to describe different methods of patient education used among patients with post breast cancer treatment pain. The aim of this final project was to improve patient education for this group of patients. The study question was: what are the different methods of patient education used for breast cancer patients experiencing pain?

### **4 Data collection and analysis**

We have applied the principles of a systematic literature review for our final project. A systematic review is a research method used for searching and integrating the literature related to a specific clinical issue based on a scientific approach that takes the results of many studies in a specific area, assesses the studies critically for reliability and validity and synthesizes the findings in order to inform practice. The goal is to consolidate and report current research about clinical knowledge or effectiveness of interventions thus informing evidence-based decision making by relating findings to clinical practice. (LoBiondo-Wood & Haber 2010: 210.)

The steps of a systematic review usually include formulating the purpose of the review, which in many cases is a clearly focused clinical problem, identifying the scope of the review, developing the specific questions to be answered and establishing the criteria for inclusion and exclusion of studies. Other steps include conducting intensive literature searches, critiquing the merit of the studies, analyzing data in a systematic process, interpreting it and finally reporting the results. (Burns & Grove 2007: 510.)

For our final project, our data was collected using database searches. The databases used were CINAHL and Medline. Search terms used were “breast cancer” AND “patient education” and “breast cancer” AND “patient education” AND “pain” (Table 1). The inclusion criteria for articles was that they were research articles, published in English

language in nursing journals, during years 2007-2012, that they had abstracts and that they answered the study question. Research results from the last five years were only used so as to have the most current information.

The articles found from the database search were analyzed by the members of the team individually first by reading the titles. The articles which did not relate to our research were eliminated. For the articles selected based on the title, the abstract was then read and those thought to be answering the question were selected. The team then looked at the articles and agreed that they were acceptable. The team analyzed the articles based on the full text to come up with the articles to be reviewed.

Table 1. Data base search in CINAHL and Medline nursing databases

Database and limitations	Search terms	Hits	Chosen by title	Chosen by abstract	Chosen by full text
Limitations: -Research articles, -published in English language, -nursing journals, -years 2007-2012, -had abstracts, -answered the study question.					
CINAHL	"breast cancer" AND "patient education"	20	19	5	0
	"breast cancer" AND "patient education" and "pain"	1	0	0	0
MEDLINE Nursing	"breast cancer" AND "patient education"	242	23	5	4
	"breast cancer" AND "patient education" and "pain"	28	8	4	3
Total		292	50	14	7

Content analysis was used to systematically analyze the articles in order to answer the study question. Content analysis is a technique that classifies text into categories

based on their theoretical importance. The technique offers a means of measuring the importance of words, phrases or sentences in a text according to frequency order or intensity of occurrence. The technique involves dividing text into idea categories and then quantifying the units of meaning according to rules that the researcher sets based on the contexts. (Burns & Grove 2007: 535; LoBiondo & Haber (2010: 275.)

## **5 Results**

Using the keywords for our final project, we found and analyzed altogether 7 articles, and decided to group the results into the following categories: Internet and computer based patient education, verbal patient education, support group patient education, telephone patient education and written patient education.

### **5.1 Internet and computer based patient education**

One patient education method which was referred to on numerous occasions was the use of internet to educate breast cancer survivors. The demand for such easily accessible information on the internet is high. In developed countries especially those with higher income, 55-60% of breast cancer patients themselves as well as their family or their friends use the Internet to find health information, talk to others in the same situation or contact health professionals as needed. With such high figures internet sources are a good pathway to communicating and teaching patients. (Bender et al. 2008.)

Methods of patient education such as the Internet and interactive computer based tools have been researched and said to have derived positive results such as reducing pain, anxiety and stress among others. Increasing the patient's knowledge about his/her health problem and cure is the aim of patient education. The knowledge acquired empowers and makes the patient participate actively as well as effect positive decisions towards his or her care. (Ryhänen et al. 2010.)

The Internet has been a considerable source of trustworthy information on pain management that proves to be an effective approach to promote patient education since a large portion of the desired demographic can be efficiently reached. Since patients may turn to the Internet for information regardless of the type and amount of instruction re-

ceived prior, it would be wise to use such a source for reaching breast cancer survivors. (Bender et al. 2008.)

Research done about an internet based program designed to educate patients on treatment options, side-effects and a great deal of information which includes experiences of other breast cancer survivors brings to light the benefit of such odds. Without a doubt the importance of fast rising technology, such as the Internet, can be used as a method of patient education. The study shows that patients who used internet based programs were reported to have an increased quality of life compared to patients who did not utilize the Internet as a tool. (Ryhänen et al. 2010.)

Internet and computer based methods of patient education are designed to be interactive, including multimedia effects such as sounds, pictures, videos and written materials. Videos of physical exercises patients can practice may even be incorporated. Results show that patients who reported better outcomes regarding pain during recuperation from breast cancer treatment were patients who had prior knowledge of breast cancer. The patients were reported to achieve a better quality of life, reduced anxiety and live well with the side effects of the disease which includes pain related complications. (Ryhänen et al. 2010.)

## 5.2 Support group patient education

Support groups are also a form of patient education. The support group was divided into face-to-face and online community support groups. Breast cancer patients receive the same benefits from both online and face-to-face peer groups. Patients seem to receive the same positive effects from online communication as from face-to-face meetings. It may be that a patient is more willing to communicate online for different reasons, for example, it is easier to access and takes less time. Patients involved in support groups such as face- to-face support groups or online support groups were reported to yield positive result, experiencing reduced pain psychologically and/or physically. (Setoyama, Yamazaki & Nakayama 2011.)

People are more at ease online and are able to express their feelings easier. As brought out before, the emotional status of a breast cancer survivor greatly affects pain. So by using such internet communication methods the survivor is more at ease emotionally. A high number of breast cancer patients expressed a desire to talk to oth-

er patients about their pain, to listen and to learn about others experiences. Especially, when a patient is reassured they are not alone in their struggle, it rejuvenates them and gives power for them to cope with their disease. Giving patients strength and support also improves their quality of life. (Setoyama et al. 2011.)

### 5.3 Verbal patient education

Verbal patient education involves direct communication between the patient and the healthcare provider (physicians, nurse, gynecologist, and radiotherapist). Patient education is able to bring to light as well as clear any misconceptions or false beliefs a patient may have about their condition. (Smith, DuHamel, Egert & Winkel 2010.)

Breast cancer treatment has improved over the years due to more advanced surgical procedures, technological advancement and updated research. Nevertheless, complications following treatment of breast cancer, such as lymphedema, still remain and are even increasing. This may be due to the surgical treatment for breast cancer which involves removal of lymph nodes. In addition, following breast cancer treatment, 44.3 percent of patients who developed lymphedema report experiencing pain and 36.9 percent of patient without lymphedema reported experiencing pain. Since pain is a common side-effect of breast cancer treatment patients want information on relieving their pain. However, the provision of verbal information to patients before they receive treatment showed a relative positive result. It has been found that patients with prior knowledge, that is, patients who have received verbal patient education, have better control over their situation and have been able to reduce their pain. Some examples of this may be by doing self-help treatment and other therapeutic measures such as lymph drainage and massage. (Bani et al. 2007.)

Patients receiving verbal patient education have later reported greater pain relief post treatment (Smith et al. 2010:83). Verbal patient education involves direct communication between the patient and healthcare professional(s). A high number of patients are willing to get more information about cancer relating to pain by asking questions from their healthcare provider. There is an intense desire to know the cause of the pain they feel and how and why they feel the pain. Patients have many questions that go unanswered as a result of lack of verbal patient education or inadequate patient education from their primary health care physician or nurse. (Bender et al. 2008.)

Patients who have survived breast cancer, reported that they would be more satisfied with their treatment if they had discussed what kind of pain was likely to occur. They wished to have known what kind of sensation, intensity, the location and the duration of pain. It is very difficult for any health care professional handling the breast cancer case of a patient to know all the information about pain that is relatively likely to occur to that patient, due to the fact that every patient is different and all patients respond specifically to treatment. However, due to previous work experiences of the health care provider such as nurses, they should be aware of the possibilities and thereby provide education for patients. This is because by doing so, the patient will not be surprised or scared when the pain manifests. Patients stated that by receiving information firsthand, they would have been able to deal with their symptoms in a better way and feel less anxious when experiencing pain. Instead, the fact that patients were not informed increased fear and anxiety tremendously. In addition, patients also wanted to be informed about their pain management options, such as analgesic medications and non-pharmaceutical measures that can be taken. All this information could be acquired by the patient through a well-structured verbal patient education method provided by the nurse who is assigned to the patient's case. (Bender et al. 2008.)

#### 5.4 Telephone patient education

Telephone interviews or emails between healthcare professionals and breast cancer survivors was found to be an ineffective method of patient education. Patients felt overwhelmed by information disseminated over the phone. Most patients were not satisfied with the information they received during treatment in written or verbal form and feel they need to meet and talk with a person going through or who has gone through a similar situation as themselves. (Fitch, Nicoll & Keller-Olaman 2007.)

Speaking with a patient on the phone about pain management has been reported to be a weak source of patient education according to these findings. Patients may not experience a satisfied and secure feeling after such an encounter. The reasons for this may vary, but one such reason is the patient may feel supported for the duration of the phone call but once the phone call is over they do not remember what they were told, or suddenly feel alone again. This proves that while such methods may help some patients, it may not be the best option for all. Overwhelming the patient with too much information may negatively affect recuperation instead of promoting independence. It is important to provide simple, easy to understand instructions for the patient as well as

going over such information verbally. This way the nurse can make sure their patient comprehends the information, as well as creating an opportunity for the patient to ask questions to clarify the instructions. (Fitch et al. 2007.)

### 5.5 Questionnaire patient education

One common problem presented throughout various articles was the patient's inability to communicate or describe correctly their thoughts and experiences about pain. It was found that the dissatisfaction experienced by many cancer patients was due to needed information on how to deal with their illness. Despite the high amount of research previously done on breast cancer patients, they still tend to feel they were not provided inadequate information. (Fitch et al. 2007.)

Patients who are able to ask questions that may be bothering them feel less anxious about their situation, have better outcomes and satisfaction of treatment. Many patients are unable to ask such important questions they may have for different reasons. Some may feel like they do not know how to ask the question correctly. Question-prompting interviews have been developed to advocate the patient's ability to ask questions that are important to them. Such questionnaires can open the gateway to efficient pain management and patient education, once the nurse understands the needs of the patient and the patient is able to ask questions that are important to them. (Bender et al. 2008.)

Patients being unable to express their concerns and misunderstandings of pain as well as pain management have a large impact on the quality of care they receive regarding pain management. For this reason ways to improve communication between the patient and health care professional as well as the patients understanding of the importance of communication are vital to the patient's outcome and satisfaction of care. (Smith et al. 2010.)

Regardless of the patient education method used initially in teaching a patient about their own pain management, a questionnaire can be used to assess the patients understanding as well as the information grasped by the patient respecting pain management. The use of questionnaires brings much positive feedback as well as satisfaction from the patient's point of view. A patient with a better emotional status reports better quality of life as well as less pain. The reduction of pain is surprisingly affected

by a patient's emotions; hence, such a questionnaire as suggested above can improve emotional status by improving communication and clarifying uncertainty the patient may be experiencing. (Smith et al. 2010.)

### 5.6 Written patient education

Patients were satisfied by the guidelines at their disposal based on written pain education. Some patients highlighted the importance of nurses giving them written material on pain and pain management. This use of structured guidelines and continuous patient education in pain management helps patients become more independent. It was found that some were able to use their written guidelines as a stepping stone to achieving confidence and a sense of self-reliance. Guiding a patient to a point where the patient feels they have learned something and gained more confidence to care for themselves is the ultimate goal of patient education as well as a nurses' promotion of health. (Rustoen et al. 2009.)

## 6 Discussion

### 6.1 Discussion of results

There are copious studies about breast cancer pain and pain management, but there are very few articles on nurses giving patient education relating to breast cancer pain. It is not clear if the present findings are due to the selected search terms or keywords; however, we were unable to find many studies based on pain education provided to relieve the patients symptoms of pain. Nurses need to carry out more research in the future on how to improve patient education for pain.

A patient who has been empowered as a result of successful patient education or counseling does not guarantee an increase in the role played in the relationship with their doctors, neither did it lead to a high clinical result of their treatment. Instead, it contributes to increase their knowledge about the disease, complications and side effects of treatment which they may face. This in turn prepares and educates the patient about possible situations. (Ryhänen et al. 2010.)



Nurses prefer to treat pain only by pharmacological means (Simonsen-Rehn et al. 2000). However, patients reported that providing information and educating is equally necessary to alleviate pain. Therefore, it may be easier and faster for a nurse to turn up with drugs when a patient complains of pain, especially with the lack of time for nursing staff is a problem, although providing patient education gives a more positive effect. Effective patient education calms the patients, reduce stress and anxiety, as well as promoting the patients independence and confidence. (Bender et al. 2008.) Patients explain that there is an importance in recognizing and talking about their pain, education is usually more useful and relaxes them more. If verbal communication is used as a patient education method the need for repetition of information regarding a certain aspect of pain management is crucial. This is an important step in the patient education process.

Internet based patient education allows for promoting pain management in the most comfortable way for the survivor. Therefore, if information and open communication with healthcare providers is easily accessible and simple to understand, the patient may feel increased satisfaction of care based alone on readily available information found online. With such easy access to information, patient independence and self-reliance may flourish; thus achieving the goal of effective patient education. (Bender et al. 2008.) Women want more information posted on the internet in an easy-to-use manner to gain knowledge of their condition. The Internet is the most efficient form of patient education according to a breast cancer survivors. Studies have brought to light the significance of online resources as a method for pain management. (Bender et al. 2008.)

A nurse, by getting to know your patient and how they best learn and retain information can choose a form of patient education that will be most effective for them. In order for nurses to have the ability to decipher between patient education methods and what suits their individual patient the best, nurses must be taught how to work in such a manner. The need for educated health care professional as well as patient's increase awareness. This increased awareness on both the patient and nurse's part optimizes the patient's outcome. (Bokhari et al. 2009.) It is the nurse's job to teach her patient how to manage their post treatment pain in the best way possible for the patient. By open communication the nurse is able to choose from the countless forms of patient education methods used today which will suit his or her patient. This ability involves much awareness and prior education on the health care professional's part.

Patients feel very powerless and out of control about their ailment when there is lack of information (Bender et al. 2008). Patients may at times feel left in the dark, not knowing whom to consult or how to consult a healthcare provider about their pain. Patients have the impression that pain is a part of cancer and they will just have to deal with it. They did not have information about how to care for their pain on their own. This situation affects the quality of life of the patients because the pain was not treated adequately due to lack of patient education. There is need of verbal patient education between the nurse and the patient. This is because through the face to face verbal communication, patient's numerous questions will be answered.

Patients may feel the need to speak with other people in the same situation as them (Fitch et al. 2007). If a patient who has recently finished treatment has the opportunity to speak with a more experienced breast cancer survivor about pain management, they may receive guidance or suggestions that the nurse may not be able to provide. Support groups are effective forms of patient education because a survivor has endured the struggle and strenuous journey of breast cancer, and knows how a patient in a similar situation feels as well as what they need.

## 6.2 Ethical consideration

The goal in research is to produce sound scientific knowledge. In order to achieve this, honest conduct, reporting and publication of quality research is mandatory (Burns & Grove 2007:230). During our final project we conducted our research based on principles that were set in the beginning of the process. We were open to all results that came up in the search for as long as they confirmed the criteria.

“Inherent in all research is the demand for protection of human subjects. This demand exists for both quantitative and qualitative research.” (LoBiondo-Wood and Haber 2010:117.) With our method of research, our main ethical considerations was protecting the rights to property for the authors of the articles as well as providing information and findings that are credible. All sources used in the final project were correctly referenced. No attempt to take credit for work that has not been done by the research team was made.

### 6.3 Discussion of validity and limitations

Validity can be defined as the accuracy of a claim throughout a research process. It also is the theoretical reflection of reality. (Burns & Grove 2007:365.) Our searches were done in CINAHL and Medline for their reliability as sources of scientific articles. Only articles published in nursing journals were analyzed. Patient education has greatly evolved over the past few years, for our results to be relevant to clinical practice only articles published in the last five years were analyzed. In analyzing the articles the three members of the final project team all read the articles individually and chose the articles that were relevant as well as the themes that were derived. A discussion of the whole team was then done with the acceptance of an article, relying on consensus with at least two team members accepting it.

One of the limitations that was posed by our final project was that we came across many researches about how nurses should care for patients with pain as well as many articles which had suggestions of what patients need when they have pain, but it was difficult to find articles that discussed methods used for patient education for patients who have breast cancer pain.

## 7 Conclusion

Throughout the years, much research has taken place on different methods of patient education regarding breast cancer patients. There were examples of many different methods of patient education used for patients experiencing chronic neuropathic pain. Such described methods were acupuncture, physiotherapy, imagery, as well as physiologic counselling. (Bokhari et al. 2009.)

Patient education for pain management does not need to be written or verbal material alone. Other innovative ways can be used that may remain in the patients memory better than written instructions. For instance, a form with pictures of arm exercises used to relieve neuropathic pain and increase the range of motion may be a good reminder for a patient. Physically practicing such exercises with the patient and guiding them to correctly execute each movement will help the patient remember the exercises as well as increase their confidence to independently practice such movements at home. However, the aim was to find useful methods of patient education in regard to breast cancer

pain. Patients found that most nurses did not offer enough knowledge (patient education) to them; rather they were treating pain through pharmacological ways. Patients reported to have reduced anxiety when given written materials about pain and its management. (Rustoen et al. 2008.)

Many research articles highlighted the value of patient education and the satisfaction the patient experienced but did not mention the method of patient education used. Some methods were in need of additional research to broaden the results and the effectiveness, such as the use of internet, the telephone and imagery to help deal with neuropathic pain. The patient education methods used specifically towards breast cancer survivors experiencing chronic post treatment pain is quite limited at this time. Further research on new methods would broaden the patient education field with endless possibilities. For example, research on methods such as the use of music or radio talk shows where patients are free to call in and ask questions were not brought out at all. The results received in this work could be used in nursing education to teach new nurses to make use of various patient education methods in their work directly after graduation. It would also be beneficial to use in encouraging nurses already in the field to utilize different patient education methods. The results can also be used to improve nurses' knowledge of available patient education methods.

## References

Adams, J., Anderson, S., Bateman, H., Djonokusumo, E., Hillmore, R., Jackson, D., Lakhani, I., Lusznat, S., McAdam, K. and Sargeant, H. (2007) Dictionary of Nursing. 2<sup>nd</sup> ed. London: A & C Black Publishers Ltd.

Bani, H., Fasching, P., Lux, M., Rauh, C., Willner, M., Eder, I., Loehberg, C., Schrauder, M., Beckmann, M. and Bani, M. (2007) Lymphedema in breast cancer survivors: assessment and information provision in a specialized breast unit. *Patient Education & Counseling* 66 (3), 311-318.

Bender, J., Hohenadel, J., Wong, J., Katz, J., Ferris, L., Shobbrook, C., Warr, D. and Jadad, A. (2008) What patients with cancer want to know about pain: a qualitative study. *Journal of Pain & Symptom Management* 35 (2), 177-187.

Bokhari, F. and Sawatzky, J. (2009) Chronic Neuropathic Pain in Women After Breast Cancer Treatment. *Pain Management Nursing* 2009 (12), 197–205.

Boureau, F., Doubrere, J. and Luu, M. (1990) Study of Verbal Description in Neuropathic Pain. *Pain* 42(2), 145-152.

Burns, N. and Grove, S. (2007) Understanding Nursing Research Building-Evidence based Practice. 4<sup>th</sup> ed. St.Louis: Saunders Elsevier.

Davis, M. (2006) .What is New in Neuropathic Pain? *Journal of Supportive Care in Cancer* 19(9), 1393-1401.

Fitch, M., Nicoll, I. and Keller-Olaman, S. (2007) Breast cancer information dissemination strategies finding out what works. *Canadian Oncology Nursing Journal* 17 (4), 206-218.

Friedman, A., Cosby, R., Boyko, S., Hatton-Bauer, J. and Turnbull, G. (2011) Effective teaching strategies and methods of delivery for patient education: a systematic review and practice guideline recommendations. *Journal of Cancer Education* 26 (1), 12-21.

Guide to clinical preventive services (1989) *Report of the U.S. Preventive Services Task Force* 9 (10): 63-69.

LoBiondo-Wood, G. and Haber, J. (2010) *Nursing Research Methods and Critical Appraisal for Evidence-Based Practice*. 7<sup>th</sup> ed. St.Louis: Mosby Elsevier.

Lorig, K, and associates. (2001) *Patient education: A practical approach*. California: Sage publications Ltd. LoBiondo-Wood, G. and Haber, J. (2010) *Nursing Research Methods and Critical Appraisal for Evidence-Based Practice*. 7<sup>th</sup> ed. St.Louis: Mosby Elsevier.

Parkin, D. and Fernández, L. (2006) Use of statistics to assess the global burden of breast cancer. *Breast Journal* 12(1) 70-80

Paskett, E. and Stark, N. (2007) Lymphedema: knowledge, treatment, and impact among breast cancer survivors. *Breast Journal* 6 (6), 373-378.

Rawson, R. and Miller, M. (2012) Chronic pain in breast cancer survivors. *Journal of Cancer Nursing Practice* 11 (4) 14-18.

Rustoen, T., Gaardsrud, T., Leegaard, M. and Wahl, A. (2009) Nursing pain management – A qualitative interview study of patients with pain, hospitalized for cancer treatment. *Pain Management Nursing* 10(1), 48-55.

Ryhanen, A., Siekkinen, M., Rankinen, S., Korvenranta, H. and Leino-Kilpi, H. (2010) The effects of internet or interactive computer-based patient education in the field of breast cancer: a systematic literature review. *Patient Education & Counseling* 79 (1), 5-13.

Setoyama, Y., Yamazaki, Y. and Nakayama, K. (2011) Comparing support to breast cancer patients from online communities and face-to-face support groups. *Patient Education & Counseling* 85 (2), 95-100.

Simonsen-Rehn, N., Sarvimäki, A. and Benkö, S. (2000) Cancer patients' experiences of care related pain. *Journal of Cancer Norway* 3(20), 4-9.

Smith, M., DuHamel, K., Egert, J. and Winkel, G. (2010) Impact of a brief intervention on patient communication and barriers to pain management: results from a randomized controlled trial. *Patient Education & Counseling* 81 (1), 79-86.

van Hezewijk, A., van Ranke, G., Nes, J., Stiggelbout, A., de Bock, G. and van de Velde, C. (2011) Patients' needs and preferences in routine follow-up for early breast cancer and evaluation of changing role of the nurse practitioner. *Journal of Cancer Surgery* 37 (), 765-773.

Vehmanen, L. (2012). *Tietoa potilaalle: Rintasyöpä: toteaminen ja ennuste. Terveysportti.*

Table 2 Articles (n=7) analysed in the review from CINAHL and Medline

Author(s), year, country where the study was conducted	Title of the article	Purpose	Participants (sample size)	Data collection and analysis	Results relevant for our study questions
Bender, JL, Hohenadel, J, Wong, J Katz, J, Ferris, LE, Shobbrook, C, Warr,D, Jadad, AR (2008) Canada	What patients with cancer want to know about pain: A qualitative study.	Exploring and describing the questions that women with breast cancer have about pain.	18 participants	Qualitative study utilizing semi-structured interviews by phone or a scheduled clinic appointment.	Ways to help patients ask questions bothering them are needed to help the nurse know what to answer as well as hopefully improving the patients' quality of life and pain management. One such source that may be useful for this are internet based tools.
Setoyama, Y. Yamazaki, Y. Nakayama, K. (2011) Japan	Comparing support to breast cancer patients from online communities and face to face support groups	Comparing online communities with face-to-face support groups to determine which breast cancer patients prefer best for support.	1039 breast cancer patients	Cross-sectional study with face-to-face support groups and online information.	Online information as well as face-to-face contact are beneficial for different reasons.
Ryhänen, A. Siekkinen, M. Rankinen, S. Korvenranta,H.Leino-Kilpi,H. (2010) Finland	The effects of internet or interactive computer-based patient education in the field of breast cancer: A systematic literature review	To research the different types of internet or interactive computer-based patient education programs available and their effectiveness.	2374 individuals	Internet based teaching	Computer based education programs are useful in educating patients.
Fitch, M. Nicoll, I. Keller-	Breast cancer information dissemination strategies--	To discover the best way to spread information about breast cancer.	28 breast cancer survivors	12 focus groups	The use of telephones as a patient education method is ineffective.



Olaman, S. (2007) USA	finding out what works				
Bani, HA, Fasching, PA, Lux, MM, Rauh, C, Willner, M, Eder, I, Loehberg, C, Schrauder, M, Beckmann, MW and Bani, MR. (2007) Germany	Lymphedema in breast cancer survivors: Assessment and information provision in a specialised breast unit	The purpose of our study was the evaluation of self-reported incidences of lymphedema in breast cancer survivors and the effect of providing the patients with information about lymphedema on the extent to which lymph-drainage massage services and compression garments were used.	742 survivors.	Qualitative research method	Providing information about the condition is positive for the patient.
Rustoen, T., Gaardsrud, T., Leegaard, M. Wahl, A. (2009) Norway	Nursing pain management- A qualitative interview study of patients with pain, hospitalised for cancer treatment	Explore cancer patients' experience of nursing pain management during hospitalization for cancer treatment.	18 participants	Qualitative study utilizing interviews for data collection and analyzed by systemic text condensation	Nurses play an important part in pain management.
Smith, MY, DuHamel, KN, Egert, J, and Winkel, G (2010) USA	Impact of a brief intervention on patients communication and barriers to pain management: Results from a randomised controlled trial	This study examined the impact of a brief pain communication/education intervention on patient outcomes in breast cancer. We hypothesized that our intervention would improve patient communication and reduce misconceptions concerning pain management, and that patients who perceived their physician as being more facilitative and receptive, would report better outcomes.	89 Patients	Randomized controlled trial	Communication between nurse and patient helps reduce barriers against patient education and can lead to better pain relief.

