



Special issue on Nursing and Cancer

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From the Editor

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In this fourth issue of this year a number of papers from the region present on various aspects of nursing care in terminal illness.

An integrative literature review looked at the association between programmed exercise and post bone marrow transplant (BMT) fatigue. A total of 12 articles according to specific inclusion criteria were reviewed. It was clear that programmed exercise has a role in increase muscle strength and decrease the fatigue level post BMT. The author concluded that further research needs to find the best type of exercise which can be carried out by post transplant patients in the safest and efficient ways.

As with a quantitative study, critical analysis of a qualitative study involves an in-depth review of how each step of the research was undertaken. Qualitative and quantitative studies are, however, fundamentally different approaches to research and therefore need to be considered differently with regard to critiquing. The different philosophical underpinnings of the various qualitative research methods generate discrete ways of reasoning and distinct terminology; however, there are also many similarities within these methods. Because of this and its subjective nature, qualitative research it is often regarded as more difficult to critique. Nevertheless, an evidenced-based profession such as nursing cannot accept research at face value, and nurses need to be able to determine the strengths and limitations of qualitative as well as quantitative research studies when reviewing the available literature on a topic.

A second paper looked at the Quality of Life among Long-Term Breast Cancer Survivors. The author was looking to examine the specific aspects of QoL that were affected in long-term breast cancer

survivors, and to identify the impact of breast cancer treatment on the QoL of women with breast cancer.

Several valid instruments were used to measure QoL in breast cancer patients. (EORTC QLQ-C30) found to be the most common to measure QoL in breast cancer patients. Most studies reported that long-term survivors of breast cancer experienced good overall QoL. However, almost all studies reported that breast cancer survivors experienced some specific problems. Physical and Psychological factors were found to predict subsequent QoL in breast cancer patients. The author concluded that a Holistic care approach needed for a better understanding of QoL issues among breast cancer survivors. Social and sexual functioning needed more attention

Along the same theme a second paper look at the end of Life Outcomes for Lung Cancer Patients who Use Different Coping Strategies. The authors attempt to evaluate end of life outcomes for lung cancer patients when they use their coping strategies when they are near the death. This integrative review found that lung cancer patients use many coping strategies to overcome the stressors during the period of end of life, and these strategies depend on cultural, educational and financial factors. Also, the oncology nurses play a vital role to help patients and families to be adapt with new changes; these abilities of adaptation create positive outcomes on the quality of life for patients near end of life. The authors concluded that in order to maintain a high quality of end of life it is important to manage the symptoms as soon as possible, and for more enhancement the oncology nurses should use comprehensive care planning strategies which consider helpful mechanisms in achieving patients outcomes

A paper looked at the effect of prolonged breastfeeding on prevention of breast cancer. A total of eight articles were reviewed. The findings produced a total of seven case control articles, one cohort study, and one systematic review which were selected and formed the basis for this review; they demonstrate that prolonged breastfeeding has an inverse relation with breast cancer among pre-menopausal females as well as post-menopausal females. The author concluded that there is an inverse relation between breastfeeding and breast cancer. Females should breast feed their children more than six months. The results of this paper will direct nurses to build education programs about breastfeeding and breast

cancer, as well as guide policy makers to build new policies that are convenient with female needs.

Acute Myeloid Leukemia is a clonal disorder of hematopoietic stem cells characterized by the inhibition of differentiation and the subsequent accumulation of cells at various stages of incomplete maturation, and by reducing production of healthy hematopoietic element. Leukemia in general accounts to be the fourth cancer among Jordanian males and the fifth cancer among Jordanian females with the percentage of 8.3 and 4.5 respectively (Cancer incidence in Jordan 2009). Despite significant advances in the supportive care, infectious complications continue to be a significant cause of morbidity and mortality among leukemia patients. Invasive fungal infections (IFIs) are a leading cause of mortality and morbidity among patients with hematological malignancies and prolonged neutropenia after chemotherapy. Invasive aspergillosis (IA) is a life-threatening infection among the immunocompromised patients, mainly in acute leukemia. 57% of patients were neutropenic at the time of diagnosis. Half of them received a recent course of high-dose cytosine arabinoside.

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Effects of Spirituality in Breast Cancer Survivors: Critique of Quantitative Research

Bilal S. H. Badr Naga, Nijmeh M. H. Al-Atiyyat

Reducing Post Bone Marrow Transplant Fatigue by Programmed Exercise among Adult Cancer Patients

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1. Introduction

Fatigue is a multidimensional concept with several modes of expression: physical, emotional and cognitive. Fatigue is associated with the inactivity presentation or lack of motivation (Carlson et al., 2006). Fatigue is an exceedingly common, often treatable problem in cancer patients that profoundly affects all aspects of quality of life. Patients report fatigue as one of the most important and distressing symptoms related to cancer (Campos, Hassan, Riechelmann & Giglio, 2010). Also fatigue is reported as one of the most common side effects of chemotherapy (Phillips et al., 2012). Patients describe cancer related fatigue as devastating to many life domains, degrading their vocational, familial, and societal roles (Cheville, 2009). Insufficient coping with the experience of cancer, fear of disease recurrence, dysfunctional cognition concerning fatigue, dysregulation of sleep and dysregulation of activity are all factors that play a role in fatigue severity. (Gielissen et al., 2007).

Chemotherapy is one of the treatment regimens which is used to treat malignant disorders and sometimes non malignant disorders, by itself or in combination with other treatment regimens. The chemotherapy dose plays a role on the fatigue level and its severity (Mahoney et al., 2012). Also one frequently underestimated factor contributing to loss of physical performance in cancer patients is the lack of muscular activity during in-hospital treatment (Dimeo, Fetscher, Lange, Mertelsmann & Keul 2013).

Bone Marrow Transplant (BMT) can be an extraordinary, life-saving treatment; it has now become the standard treatment for a number of neoplastic and immunological disorders (Bishop, Welsh & Wingard, 2001). Post BMT fatigue is common among patients and it has an effect in their quality of life, however this fatigue associated with transplant-related toxicities such as

Abstract

Purpose: The purpose of this integrative literature review is to find the association between programmed exercise and post bone marrow transplant (BMT) fatigue.

Methods: Electronic data bases and journals review was conducted to look for relevant articles. The found articles were reduced to 12 articles according to specific inclusion criteria.

Results: Programmed exercise has a role in increasing muscle strength and decreasing the fatigue level post BMT; also the patient can practice it safely directly post transplant, and there is no evidence for negative effects of exercise upon post BMT fatigue.

Implications and recommendations: Further research needs to find the best type of exercise which can be carried out by post transplant patients in the safest and efficient ways, as the literature showed there are many types of exercise like aerobic, strength, and stretching exercise. Also as there is not any negative point about the exercise, the nurses should educate more and more about the exercise and how to educate their patients about the importance of exercise.

Key words: Bone marrow transplant, fatigue, exercise.

functional impairment and muscle weakness may be related to corticosteroids usage (Mello, Tanaka & Dulley, 2003). 35% of the BMT patients experienced severe fatigue (Gielissen et al., 2007).

To reduce fatigue, patients have been traditionally advised to avoid physical efforts and to down regulate their activity level (Carlson et al., 2006). Unfortunately many researchers don't agree with this advice and show a significant effect of physical activity in reducing the fatigue level. The first usage of therapeutic exercise intervention in oncological follow up treatment and rehabilitation was made in Germany about 25 years ago on breast cancer patients, and it shows a positive psychological and physical effect (Baumann, Kraut, Schul, Bloch, & Fauser, 2010).

According to available databases there are few current articles that define the role of exercise in decreasing post bone marrow transplant fatigue, so there is a need to know if there is any relation between programmed exercise and post BMT fatigue level?

Lavine conservational model will guide this literature.

2. Methods

An extensive search was conducted to look for articles related to post BMT fatigue management by programmed exercise. A literature search was undertaken using electronic data bases and journals. The used data bases were: Science Direct, Pubmed, and Ovid nursing. The key words used to find the articles were: exercise, high dose chemotherapy, hematopoietic stem cell transplant, fatigue post BMT, and fatigue induced by chemotherapy, and their alternatives; also a combination of some of these words has been used to find more relevant articles.

The search process yielded many articles but not all of them relevant to the phenomenon of interest, so the articles were reduced to 12 according to specific inclusion criteria.

Articles were considered relevant if they:

- 1- Contained information about cancer related fatigue, exercise among cancer patients, exercise for BMT patients, bone marrow transplant complications, post bone marrow transplant fatigue, and high dose chemotherapy complications management.
- 2- Were written in English language.
- 3- Were a quantitative study with any research design.
- 4- Any type of transplant.
- 5- Adult age group (more than 18 years).

Although the time frame for the relevant articles should be the maximum five years, but some articles before 2008 were used to reach the term of data saturation, as there were few current studies related to the topic and that met the inclusion criteria.

2.1 Methodological characteristics

12 articles composing this review ranged from 1997 to 2013 with different research designs. The majority of designs were descriptive studies and prospective studies, in addition to 2 randomized clinical trials, 2 cross sectional studies, and 1 as a review of literature. No article was based on theory, and some old studies were used to reach the term of data saturations as per (Dimeo, Fetscher, Lange, Mertelsmann & Keul, 1997).

The sample size for the relevant articles ranged from 12-231 participants and all the studies have the two types of transplant, Autologous and Allogeneic transplant.

The age group for the participants was from 18 till 65 years old.

3. Results

3.1 Effect of Exercise on Post BMT Fatigue

Impairment of physical performance and fatigue are common, and sometimes they are serious side effects of cancer treatment. It has been estimated that the problem affects up to 70% of cancer patients during chemotherapy or radiotherapy. One frequently underestimated factor contributing to loss of physical performance in cancer patients is the lack of muscular activity during in-hospital treatment (Dimeo, Fetscher, Lange, Mertelsmann & Keul 2013). Also the medications used, such as steroids to manage post BMT complications may affect the physical performance of patients, which leads to muscle atrophy.

Exercise has been proposed as a non-pharmacologic adjuvant therapy to combat the physiological and psychological symptoms of Hematopoietic Stem Cells Transplant (HCST) (Wiskemann & Huber, 2008).

Post Bone Marrow Transplant (BMT) fatigue is common among patients and it has an effect on their quality of life, however this fatigue associated with transplant-related toxicities such as functional impairment and muscle weakness, may be related to corticosteroids usage (Mello, Tanaka & Dulley, 2003).

35% of the BMT patients experienced severe fatigue. The percentage of patients with severe fatigue remained stable during the years after transplantation. Several psychosocial factors, but not medical factors, were associated with fatigue; there were no decrease in fatigue complaints during the first years after Stem Cell Transplant (Gielissen et al., 2007).

Recent guidelines for exercise prescription for cancer survivors from the American College of Sports Medicine (Schmitz et al. 2010) report no contraindication for starting an exercise program in patients undergoing either autologous or allogeneic HSCT however, issues regarding, the ideal time for starting a program safely and effectively, type of program, frequency, intensity and duration is not confirmed, especially in relation to the HSCT treatment trajectory, but another study conducted in 1997 by Diemo and his colleagues revealed that

aerobic exercise can be safely carried out immediately after high-dose chemotherapy and can partially prevent loss of physical performance (Dimeo, Fetscher, Lange, Mertelsmann & Keul, 1997) Also the programmed exercise will be efficient in promoting muscle strength after Allogenic BMT (Mello, Tanaka & Dulley, 2003). On the other hand Carlson, Smith, Russell, Fibich and Whittaker (2006) mentioned in their study there is a very large improvement in fatigue level over the course of an individualized aerobic exercise program in post HSCT among patients who were suffering from high levels of fatigue for which no morphological, biochemical, hormonal or psychological correlate could be identified. Also there is a significant benefit from the exercise interventions which have been predominantly reported for physical performance, quality of life and fatigue status of the patients like a faster recurrence of immune cells as the post HSCT become neutropenic, or reduced severity of therapy-related side effects can be estimated (Wiskemann & Huber, 2008). A study conducted in 2012 demonstrates that there is a potential positive effect of strength training on physical activity, fatigue, and quality of life in people receiving high-dose chemotherapy and HSCT (Hacker et al., 2012).

A 12 weeks aerobic training program on cycle ergometer initiated between 9 and 92 months after HSCT showed cardiovascular effects through increased stroke volume and decreased heart rate (Carlson et al. 2006).

Donnelly and his colleagues in their study, discuss the role of physiotherapist which may have a role in decreasing cancer related fatigue by using exercise and teaching energy conservation techniques for cancer patients (Donnelly et al., 2009).

Arnold and Taylor in their study which was conducted in 2010, showed that there is no significant effect of aerobic exercise interventions for fatigue outcomes in hospitalized patients with cancer. The study was limited by the small number of included trials, with most having small sample sizes, so its results cannot be generalized.

The findings of Wilson and his colleagues in their study which was conducted in 2005 suggest that individually prescribed, home based aerobic exercise is an acceptable, safe, and potentially effective intervention for improving physical functioning and fatigue in sedentary HSCT recipients. Also his findings showed a significant improvement in the fatigue severity and duration. Another study by Brown and his colleagues (2011) the purpose of which was to evaluate the effect of types of exercise in cancer related fatigue showed that resistance exercise interventions of moderate intensity were more effective than low intensity or aerobic exercise.

Another study by Kuchinski, Reading & Lash (2009), aimed to determine if patients receiving treatment for cancer experienced less treatment-related fatigue if they participated in a regular committed exercise regimen, compared to those who did not exercise regularly,

and its result was an individualized exercise program should be included in the treatment of patients receiving chemotherapy and/or radiation therapy.

4. Summary and Conclusion

The purpose of this literature review was to find the association between exercise and post bone marrow transplantation fatigue. Extensive research has been conducted to find if articles met a specific inclusion criteria; 12 articles met the inclusion criteria, their results are discussed and analyzed in this paper.

Physical exercise has a great impact in maintaining a patient's health status in the physical and psychological aspect. From the previous results no study reported that there is a negative effect of exercise among patients post BMT, and the reviewed articles didn't mention a specific type of exercise to be carried out post BMT. Some of the articles' results revealed the importance of strength exercise, and others revealed the importance of aerobic exercise to decrease fatigue levels and improve quality of life among BMT patients, but no study referred to the negative impact of exercise post BMT; also the exercise can be carried out safely post transplant.

4.1 Implications and recommendations

Further research needs to find the best type of exercise which can be carried out by post transplant patients in the safest and efficient ways, as the literature showed there are many types of exercise like aerobic, strength, and stretching exercise. Also as there are not any negative points about the exercise, the nurses should be educated more and more about exercise and how to educate their patients about the importance of exercise.

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Breastfeeding for the Prevention of Breast Cancer: Evidence Based Practice

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Introduction

Nowadays, breast cancer is considered to be the most frequent type of cancer among women, in the world (Parkin, 2004). Approximately 207,090 new cases were diagnosed with breast cancer in 2010 (American Cancer Society (ACS), 2010). Moreover, it is stated that breast cancer is the leading cause of death among women over the world (World Health Organization (WHO), 2009), with 39,840 women facing death in 2010 (ACS, 2010). In Jordan, breast cancer is found to be the highest malignancy among females with 926 new cases diagnosed, with incidence rates 36.8% of females diagnosed with cancer among the female population in 2009 (Jordanian Cancer Registry, 2009). Thus, it is noteworthy to study and examine the prevention of breast cancer, since it is a widespread type of cancer, internationally and regionally.

Many studies explore the effect of breastfeeding on the prevention of breast cancer; however, the findings of these studies remain inconsistent. While, some studies recommend the usage of breastfeeding to prevent premenopausal breast cancer only (Collaborative Group on Hormonal Factors in Breast Cancer, 2002), others suggested a prospective factor of breastfeeding may exist only in postmenopausal women (Zheng, Duan, Liu, Zhang, Wang, Chen,... & Owens, 2000).

On the other hand, several studies examined the relationship between the duration of breastfeeding and its effect on the prevention of breast cancer. The effect of breastfeeding on the prevention of breast cancer among women with gene mutations was the topic of investigation for other studies.

Purpose

Since breastfeeding is a modifiable variable for breast cancer, working on it will be of great importance to improve the interventions that help the

Abstract

Background: Nowadays, breast cancer is considered to be the most frequent type of cancer among women, in the world. Many studies explore the effect of breastfeeding on prevention of breast cancer, however, the results remain inconsistent.

Purpose: The aim of this paper is to document the effect of prolonged breastfeeding on prevention of breast cancer.

Methodology: The eight articles recruited in this review were selected from several electronic databases: "Science Direct", "MEDLINE", the Cumulative Index to Nursing and Allied Health Literature "CINAHL" and "EBSCOhost". The articles were selected according to the inclusion criteria. One of these criteria excludes all non-research-based studies, another investigates effects of breastfeeding on prevention of breast cancer. The last criterion is for the study to be written in the English language.

Results: The findings of a total of seven case control articles, one article of cohort studies, and one systematic review were selected and formed the basis for this review, to demonstrate that prolonged breastfeeding has

an inverse relation with breast cancer among premenopausal females as well as post menopausal females.

Conclusion: There is an inverse relationship between breastfeeding and breast cancer; females should breast feed their children more than six months.

Recommendations: The results of this paper will direct nurses to build education programs about breastfeeding and breast cancer, as well as guide policy makers to build new policies that are convenient with female needs, and guide researchers to conduct other well structured studies that control other variables that are interrelated with breastfeeding and breast cancer.

Key words: breast cancer, breastfeeding and lactation.

prevention of breast cancer in the future. Therefore, this paper aims to document the effect of prolonged breastfeeding on prevention of breast cancer.

PICO Summary

- P** - Population of interest: premenopausal and postmenopausal females.
I - Intervention of interest: prolonged breastfeeding.
C - Comparison of interest: none
O - Outcome of interest: prevent breast cancer.

The clinical question is:

- Does prolonged breastfeeding reduce the future risk of breast cancer?

Findings

There are several hypotheses that clarify the role of breast feeding on prevention of breast cancer. These hypotheses suggest that the lactation period reduces the lifetime number of ovulatory cycles, reducing the risk of breast cancer particularly in young mothers. This also possibly reduces estrogen and increases prolactin production, which might decrease women's cumulative exposure to estrogen, thereby inhibiting the initiation or growth of breast cancer cells. It was also proposed that a protective effect of breastfeeding against breast cancer risk might be attributed to the excretion of carcinogenic agents from breast ductal tissue. However, these hypothesis do not clarify the relation between breastfeeding and breast cancer according to menopausal status.

In order to clarify the role of breastfeeding on the prevention of breast cancer, Gajalakshmi and colleagues carried out a multicenter large case-control study in India. The sample size was 1,866 cases and 1,873 controls. The finding of this study showed that prolonged breastfeeding was associated inversely with breast cancer among premenopausal females compared with postmenopausal females.

Msoly and her colleagues conducted a case control study in Tunisia (2010), to examine the effect of breast feeding on breast cancer. A well structured questionnaire was devised to obtain informations about breastfeeding and other risk factors from 800 participants. The findings demonstrated a significant decrease in breast cancer among premenopausal and postmenopausal females who have had a prolonged period of breastfeeding. Similarly, in a previous study, Shema and colleagues (2007) in their case controlled study, found prolonged breastfeeding was inversely associated with breast cancer among premenopausal and post menopausal women in Israel.

Moreover, Akbary and colleagues (2010), conducted a case controlled study in Iran and found that females who breastfeed their children, for at least 18 months accumulatively, showed a significant decrease in having breast cancer compared with other females who never breast fed their children. Additionally, Silva and

colleagues (2010) in their case control study in Sri Lanka, found that there are significant inverse associations between both lifetime duration of breastfeeding and average duration per child and risk of breast carcinoma.

Also, Alison and colleagues (2009) carried out a large prospective cohort study; on 60,075 participant recruited to this study. Findings demonstrated an inverse association between females having ever breastfed and incidence of premenopausal breast cancer.

Furthermore, Huo and colleges (2008) conducted a case control study in Nigeria where the findings of the study demonstrate that breast cancer risk decreased by 7% for every 12 months of breastfeeding, without any determination of menopausal status.

On the other hand, Nagata and colleagues (2012) in Japan, conducted a systematic review of updated literature. This systematic review consisted of eight studies; 3 cohort and 5 case control studies. The results of the 3 cohort studies failed to find a significant inverse relation between breastfeeding and cancer, while, two case control studies showed a significant decrease in breast cancer among females who had undertaken prolonged breastfeeding and the other three case control studies showed a non-significant decrease in breast cancer among breastfeeding females. However, the authors concluded that breast feeding may decrease incidence of breast cancer.

Evaluation of evidence:

In this paper seven case control studies and one cohort study was recruited, with level four evidence and one systematic review. These studies were conducted in different countries all over the world with publication time between 2007 and 2012. The sample size of these studies ranged from 200 to 60,000 participants.

The findings of these studies showed that prolonged breastfeeding has an inverse relationship with breast cancer among premenopausal females as well as post menopausal females.

Recommendation

Breast cancer is considered the most frequent cancer among females worldwide. So, it is highly recommended to develop an interventional focus on prevention of this disease. While there are inverse relations between breastfeeding and breast cancer, females should breast feed their children more than six months.

The results of this paper will direct nurses to build education programmes about breastfeeding and breast cancer, as well as guide policy makers to build new policies that are convenient with female needs, and guide researchers to conduct other well structured studies that control other variables that are interrelated with breastfeeding and breast cancer.

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Quality of Life among Long-Term Breast Cancer Survivors: An Integrative Review

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Introduction

Breast cancer is the most prevalent malignancy among women in the world. In 2010, the American Cancer Society (Cancer Facts and Figures, 2010. American Cancer Society) estimated approximately 209,060 new cases of breast cancer would be diagnosed and 40,230 deaths due to breast cancer would occur in the United States. In fact, most incident cancers in industrial countries have some of the highest five-year survival rates, including breast cancer. Prognosis and survival rates for breast cancer vary greatly depending on the cancer type, stage, treatment, geographical location of the patient and other associated factors. Due to early detection and multiple advanced treatment options for many patients with breast cancer this has increased the breast cancer survival rate (Mols, Vingerhoest, Coebreggh, & Van De Poll Franse, 2005). As a consequence, health-related quality of life has become a subject of great interest for patients and health care providers.

Health-related quality of life is the most important outcome of breast cancer survival. However, quality of life (QOL) following breast cancer therapy remains rarely studied. QOL among breast cancer women has received most attention for many reasons. Firstly, the number of women diagnosed with breast cancer is increasing worldwide (Montazeri, 2008). Secondly, early detection and treatment of breast cancer has improved and survivors now live longer, therefore studying QOL is important. Thirdly, it is believed that women play important roles within family and society. The concept of health-related quality of life clearly shows the effect of health on either physical or psychological aspects of life. QOL of survival patients is affected by many factors associated with breast cancer; disease stage, patient age, educational level for the patient, marital and economic status (Huijir & Abbod, 2012).

Abstract

Background: Women breast cancer incidence rate has increased. Early detection and screening with advanced treatment has increased the number of survivors. This emphasis is to address health-related quality of life in this population.

Purpose: Examine the specific aspects of QoL that were affected in long-term breast cancer survivors, and to identify the impact of breast cancer treatment on the QoL of women with breast cancer.

Method: Published research reports, conducted between 2008 and 2013, were reviewed and included if they described the QoL of breast cancer survivors. Nine quantitative studies were selected. The search strategy included a combination of key words 'quality of life' and 'breast cancer' with: survivors, long-term. The sample sizes ranged from 18 to 348 adult breast cancer patients, aged between 18 and 70 years; mean age is 47 years.

The majority of patients have had mastectomy, breast-conserving, or contralateral prophylactic mastectomy.

Result: Several valid instruments were used to measure QoL in breast cancer patients. (EORTC QLQ-C30) was found to be the most common to measure QoL in breast cancer patients. Most studies reported that long-term survivors of breast cancer experienced good overall QoL. However, almost all studies reported that breast cancer survivors experienced some specific problems. Physical and Psychological factors were found to predict subsequent QoL in breast cancer patients.

Conclusion: Holistic care approach is needed for a better understanding of QoL issues among breast cancer survivors. Social and sexual functioning needed more attention.

Key words: Breast cancer, Quality of life, survivors, long-term, health-related quality of life.

Nowadays many extensive clinical efforts have been expended to improve breast cancer treatment in order to increase the number of survivors. However, several published research articles contribute to study the QoL; many studies must be extended to add new information about the quality of life for breast cancer women as a whole. The purpose of this review article is to examine the specific aspects of quality of life that were affected in long-term breast cancer survivors, and to identify the impact of breast cancer treatment on the quality of life of women with breast cancer.

Methods

To critically examine the body of knowledge related to quality of life in breast cancer survival, a comprehensive literature review was conducted using the electronic databases of Science Direct and Pubmed for articles published between 2008 and 2013. The following key words were used to search the electronic databases: Breast cancer, Quality of life, survivors, long-term, health-related quality of life.

The term 'breast cancer' was used in combination with other key terms: survivors, long-term, quality of life, QoL, health-related quality of life. Computerized articles from Science Direct and Pubmed contained 25 and 20 research articles, respectively. All were obtained and reviewed for possible inclusion in this research review based on the specific inclusion criteria established. Inclusion criteria for the integrative reviews were the following:

1. It is a research-based study.
2. It included a patient population of breast cancer women.
3. It investigated QoL and breast cancer survival, either cured or living with metastasis.
4. It is written in the English language.

Based on the inclusion criteria, a total of eight articles published from 2008 to 2013 were selected and formed the basis for this review. Most articles were published in nursing journals. The countries in which the studies for this review were conducted include the United States, Taiwan, Iran, Lebanon, and Kuwait.

Methodological Characteristics

The eight studies composing this integrative research review were quantitative studies. One study was a randomized clinical trial, five studies were cross-section descriptive studies, and two studies were prospective. Although only nine studies were included in this research review, a wide variety of valid quality of life questionnaires is used. Instruments were used to measure QoL concept among breast cancer survival women, mainly by using the EORTC QLQ - C30; The European Organization for Research and Treatment of Cancer QLQ-C30: A quality of life instrument for use in international clinical trials in oncology. It was articulated in Europe, and it has been found to be reliable and valid in diverse cultures (Spranger et al., 1996), including; the United Arab

Emirates, Iran, Turkey and Japan. Secondly, an Arabic translation of the questionnaire already exists, approved by the authors of the instrument. EORTC QLQ-BR23 is a 23-item breast cancer site-specific supplemental module for QLQ-C30 to enhance the sensitivity and specificity for breast cancer QOL measures.

Quality of life was a primary endpoint in all studies. Three studies compared the quality of life before diagnosis and follow-up after diagnosis. Another study conducted a survey of women living with metastasised breast cancer for five years or longer, revealed that overall quality of life appeared quite favorable. Two studies compared QoL in both treatment groups to those of healthy women. Another study addresses the relationship between patient characteristics and QoL, and quality of care. Few of the studies were specifically based on a theoretical model and tested variables articulated by the theorist. Studies based on a theoretical model most often used cognitive behavioral theory and the quality of life (QOL) model.

Sample Characteristics

The sample sizes in the nine studies in this review ranged from 18 to 348 adult breast cancer patients aged between 18 and 70 years; mean age is 47 years. All of the populations were breast cancer women. The majority of patients underwent mastectomy, breast-conserving, or contralateral prophylactic mastectomy.

Results

Breast cancer is becoming a chronic disease due to screening and early detection, improved efficacy of treatment of breast cancer and increasing number of survivors. Quality of life (QoL) after treatment is a major challenge for oncologists. However, cancer-related quality of life is complex and multidimensional; physical, psychological, social, and sexual factors all playing a role in quality of life. QoL tends to be low in newly diagnosed cancer patients but by five years QoL appears to return to the norms. QoL outcomes indicate that about one year is necessary for breast cancer patients to reach a better QoL level. Post-treatment adequate management can largely reduce these delayed patients (Kwiatkowski, 2012). The patients showed satisfactory health-related QoL two years after bilateral and contralateral prophylactic mastectomy, similar to women in the general population (Unukovych et al., 2012).

There were important issues related to quality of life addressed in studies that were reviewed, beliefs that must undergo analyses of quality of life data by using several instruments might achieve more scientific results. There is evidence that this could merely lead to misleading findings and might be a source of quality of life suffering for the patients. Quality of life dimensions in breast cancer patients covered several topics in a particular way are available in studies reviewed; physical functioning and capacity, psychological and cognitive functioning, body image, sexual functioning, and social functioning. However, quality of life is affected by many associated factors and will make differences in QoL for

survival patients; age, disease stage, educational level, culture group, marital status, economical difficulties, and combination of chemotherapy, surgery and radiotherapy. Some factors were examined in several studies, in others, just one.

Physical activity and age

Age was more concerning among breast cancer survivors. Huijjer and Abbod (2012) with mean age of participants was 49.19; age range 24-79 years, concluded that younger, single, and better educated participants showed better global health status/QoL. On the EORTC-QLQ-C30, participants scored fairly well on global health status/QoL scale (Mean = 59.64; SD = 29.09). Participants received high scores on functional ability (Mean = 97.78; SD = 5.96); this may imply that physical activity after breast cancer influences survival.

When breast cancer survivors were compared with age-matched women with benign breast disease, they reported poorer physical health and functioning, but no differences in psychological stress and greater positive psychological adaptation, such as improved life outlook (Van der Steeg, De Vries, & Roukema, 2008).

Lebanese women with breast cancer scored much better on almost all functional and symptoms scales of the EORTC-QLQ-C30 compared to Kuwaiti women with breast cancer (Alawadi & Ohaeri, 2009), although the Kuwaiti sample is similar to the Lebanese sample in terms of demographics; age group and marital status.

Middle aged Arab women were mostly receiving chemotherapy. The mean scores for QLQ - C30 and BR-23 indicated that the patients had poor to average functioning and intense symptom experience (Alawadi & Ohaeri, 2009). The correlations of age with scale scores were rather low; the results are in line with the international data in showing that younger women with cancer tend to have poorer functioning and more intense symptoms, especially if they are on chemotherapy. Alawadi and Ohaeri (2009) have suggested that younger patients are more likely to suffer adverse effects because of induction of early menopause and possible infertility.

Montazeri, Vahdaninia, Harirchi, Ebrahimi, Khaleghi and Jarvandi (2008) argued that the results showed that physical functioning was improved following one year after the completion of breast cancer treatment. Iran breast cancer patients present with advanced stage and they are about 10 years younger than their western counterparts. Furthermore most of the functional scores did not improve over time. However, physical functioning was improved after 18 months follow up.

Hang et al. (2010) reported that patients with breast-conserving therapy reported worse global QOL status and role function scores and higher symptomatic scores for fatigue, pain, dyspnoea, insomnia, appetite loss, and breast and arm problem subscales than those without conserving therapy. In addition, age, marital status,

hormone manipulation and postoperative adjuvant therapy were significant confounders for QOL. In general, patients with breast-conserving therapy reported lower functional domain QOL scores and worse (higher) symptomatic domain QOL scores.

After two years follow up, Kwiatowski et al. (2013) found that physical activity after breast cancer also influence survival, despite remaining physical difficulties.

Psychological, cognitive functioning and body image

Many studies have found that breast cancer survival women continue to experience a variety of physical and psychological symptoms and need information and support.

Montazeri et al. (2008) argued that long-term (1 to 10 years) cognitive impairment in patients with breast cancer after their chemotherapy treatment has been reported. Montazeri et al. (2008) illustrated that the observed impairment occurs most often in attention, learning and processing speed and is not attributed to demographic characteristics, clinical features and baseline level of cognitive function. However, patients have moderate distress due to fear of cancer recurrence.

The breast cancer treatment group scored better in the QoL psychological domain. A possible explanation for these results might be psychological adaptation. Several studies have shown that benefit finding in the diagnosis breast cancer and its treatment result in better psychological adaptation and, thus, better QoL (Van der Steeg, De Vries, & Roukema, 2008).

Hung et al. (2010) compared the effect of breast conserving therapy with mastectomy, and found that breast conserving therapy might bring favorable cosmetic results and subsequent better QOL, especially with regard to body image, femininity, sexual function and other dimensions.

Despite that the overall quality of life appeared quite favorable in breast cancer survivors', mental dimension increase in the long run. Anxiety about their disease was reported in some women, but anxiety had a quick and short lasting effect. On the other hand, depression was more influential in the long term than anxiety and this may last until two years (Kwiatowski et al., 2013; Meisel et al., 2012).

Two years after contralateral mastectomy, more than 50% of the women reported problems with appearance and with the scars, and felt less attractive and feminine (Unukovych et al., 2012).

For emotional functioning, Kuwaiti scores were at least 10% less than the data from Korea, and other Western nations. The tendency for the emotional functioning data from the UAE and three Islamic countries to be higher than that from Kuwait, did not reach significance (Alawadi & Ohaeri, 2009).

Social and cultural domain

To compare quality of life differences over time, many studies performed repeated analysis for socio-demographic and clinical data, which included: age, education, marital status, disease stage and initial treatment.

In the Lebanese culture and society; the majority of women are still expected to be housewives, despite the fact that many Lebanese women nowadays are working outside the household. Women with breast cancer are therefore required in a sense to show good functional ability to meet the society's expectations (Hujir & Abbod, 2012). However, patients who received a combination of chemotherapy and surgery showed lower level on social functions. Level of education showed a significant difference in social contact.

Alawadi and Ohaeri, (2009) emphasize there are indications that different cultural groups may emphasize different aspects of their QOL. Hence, for such patients, the psychological, emotional and social limitations of the illness tend to become more important determinants of QOL rather than the physical symptoms.

Social functioning; social activity or social contact, tended to be low or limited following completion of breast cancer treatment due to many associated factors; physical symptoms, such as pain and fatigue, were the biggest predictors for social function. In addition, in the predictive power of financial difficulty, cancer is associated with significant family financial burden. Finally, emotional difficulties had a limitation on social contact (Alawadi & Ohaeri, 2009; Montazeri et al., 2008; Van der Steeg, De Vries, & Roukema, 2008).

Sexual functioning

Many studies using EORTC-C30 have been focused on sexual functioning, which consists of two multi-item functional scales (body image and sexual functioning), and three single item scales on sexual enjoyment.

Huang et al. (2010) explained that breast conserving therapy, might bring favorable cosmetic results and subsequent better QOL, especially with regard to body image, femininity, sexual function and other dimensions. A significant satisfaction was observed for the breast-conserving therapy group on the sex enjoyment subscale of EORTC QLQ-BR23.

Alawadi and Ohaeri (2009) and Montazeri et al. (2008) emphasized that younger patients have more sexual dysfunction due to early menopause and fertility.

Hang et al. (2010) reported the sex enjoyment subscale of EORTC QLQ-BR23, for which, more satisfaction was observed for the breast-conserving therapy group.

Conclusion

Quality of life in breast cancer surviving women has been an area of interest for quite a number of studies, and provided extensive information on quality of life, and conveyed helpful information concerning breast cancer patients' experiences during the survivors' time, in order to improve breast cancer care. The results of this review can address major concerns related to quality of life, physical, psychological symptoms and social difficulties. If we are aware as health care providers about the importance of QoL, we should hit and enhance quality of life as a tertiary level on the health care continuum.

It is highly recommended that more research is needed for a better understanding of the topic and issues related to the disease. Otherwise, research priorities should indicate patient-centered solutions for evidence-based selection of optimal treatments alternatives and side effects. In addition, psychosocial interventions, patient-physician communications, community education programs, and allocation of resources are recommended. Furthermore attention to sexual functioning should be given when studying quality of life in breast cancer patients as a comprehensive approach.

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End of Life Outcomes for Lung Cancer Patients who Use Different Coping Strategies: A Review

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Introduction

End of life (EOL) is a period of time marked by disability or disease that is progressively worse until death (Sanders et al. 2010).

There are different pathways for reaching desirable outcomes of EOL during cancer treatment; one of the important pathways is coping strategies that are developed by patients to achieve successful EOL outcomes (Hench, Axelsson & Bergman, 2010).

The concept of coping consists of actions, behaviors and thoughts aimed at dealing with the demands of events and situations that are appraised as stressful (Smorti, 2012). It has been shown that there are important connections between coping, resilience and adaptation to illness (Irwin et al. 2012). In fact the patients' coping methods play a more vital role than medical treatment during the EOL period (Hench, Axelsson & Bergman, 2010).

The purpose of choosing lung cancer patients for this is that lung cancer is one of the most common forms of cancer in the world and it is considered as the most common cause of cancer-related death. According to the World Health Organization (WHO) there were 1.37 million deaths due to lung cancer in 2011 (Kars, Grypdonck & Delden, 2011). In Jordan, the numbers of patients being diagnosed with lung cancer are increasing. There were 564 new cases (256 men and 299 women) reported in 2009, and of the total numbers of reported deaths in 2009 there were 178 (Jordan Cancer Registry, 2009).

In this literature review study, the Roy Adaptation Model (RAM) will be used as a framework; and the study concepts will be applied according to the Roy model. The aim of the usage of RAM is to identify how the patients with lung cancer will be using their coping strategies to maintain

Abstract

Background: Near end of life cancer patients are suffering from multiple distress that can affect their quality of life, and because all human beings have different levels of coping with the stressors, it is very important to understand the type of coping strategy for each cancer patient and help them to stimulate these strategies.

Purpose: To evaluate end of life outcomes for lung cancer patients when they use their coping strategies when they are near death.

Methods: After the usage of different electronic databases with specific key words, the number of found articles was 41, but only 8 articles met the inclusion criteria and were used for the current review.

Results: This integrative review found that lung cancer patients are using many coping strategies to overcome the stressors during the period of end of life, and these strategies depend on cultural, educational and financial factors. Also, oncology nurses play a vital role in helping patients and families to adapt to new changes; these abilities of adaptation create positive outcomes on the quality of life for patients near end of life.

Implications and Recommendations: In order to maintain a high quality of end of life it is important to manage the symptoms as soon as possible, and for more enhancement the oncology nurses should use comprehensive care planning strategies which consider helpful mechanisms in achieving patient' outcomes.

Key words: End of life, coping strategy, lung cancer

desirable outcomes during the EOL period. Within the context of the Roy Adaptation Model, individuals and groups are regarded as adaptive systems in which their behaviors are in response to environmental stimuli.

The patients during end stage cancer disease may be suffering from mental abilities decline, which means that one domain of coping strategies is lost (Watts, 2012). Therefore it will be questionable to know how the patients coping strategies can improve the EOL outcomes.

Methods

In order to achieve the purpose of the current integrative review the studies were identified through an electronic search of the literature using the databases PubMed, Ovid and EBSCO. The included studies were published from 2001 to 2012 and the following search terms were used alone and in combination: “end of life”, “coping”, “lung cancer”, “nurse and nursing”. Additional articles were identified through Google search. Since there is a paucity of data regarding the EOL outcomes in relation to coping strategies (Saito et al. 2011), studies that included the EOL issues for lung cancer patients were used in this integrative review. Inclusion criteria for the selected articles were: (a) primary research articles; (b) published

between 2008 and 2012; (c) focusing on end of life issues among cancer patients; (d) describing coping strategies and (E) in English.

Initial selection took place by assessing title and abstract. When these appeared to meet the inclusion criteria, full-text articles were obtained, read extensively, and assessed in depth according to the criteria mentioned before. From 41 articles that were found in relation to search terms; only eight articles met the inclusion criteria for review. Duplicate articles were excluded, as were abstracts that did not meet the inclusion criteria (Figure 1). The selected articles were read and summarized in Table 1.

Methodological Characteristics

The eight studies were quantitative studies, four studies took a non-experimental and cross sectional design, one was a longitudinal study, two were prospective and the last one was a distinctive study in which a prospective approach was used with a large sample size.

The eight quantitative articles used multiple models and theoretical frameworks with different instruments to measure and define the variables in an operational

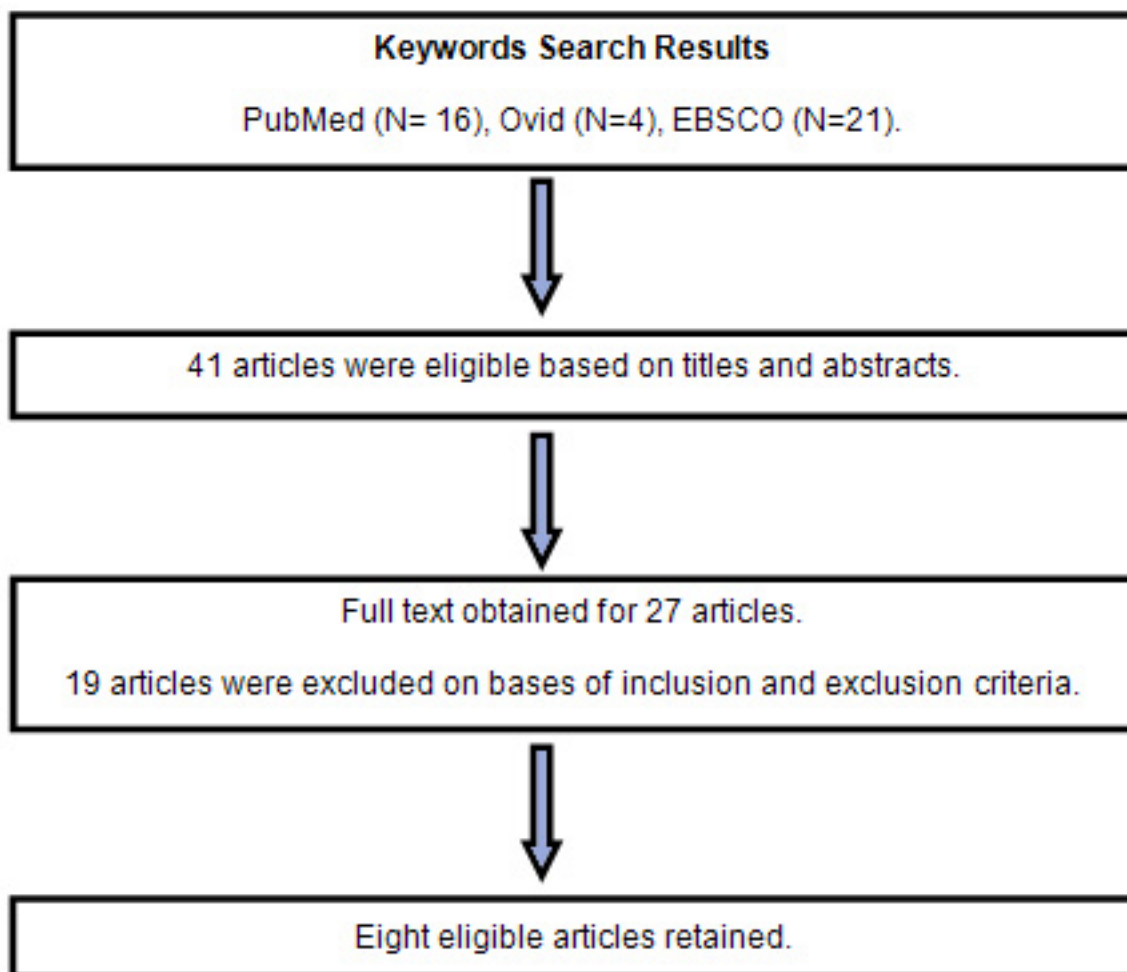


Figure 1: Algorithm of the process used to search for and select appropriate articles to review for end of life outcomes for lung cancer patients who use different coping strategies.

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Author	Purpose	Findings	Sample size	Design
Harleah, B., Janine, O. & Susan, M. (2009)	To test an adapted end-of-life of the geriatric cancer experience and provide evidence of the model for use in practice and research.	As symptoms severity increases, the patient's QOL decreases. As the spiritual experience increases QOL also increases. The model supports caring for the physical and metaphysical dimensions of the patient's life. It also highlights a need for holistic care inclusive of physical, emotional, and spiritual domains.	403 hospice patients.	Non-experimental and cross-sectional.
Hermann, C. (2011)	To describe the quality of life (QOL) of patients near the end of life and to identify determinants of their QOL.	QOL was most affected by symptoms experienced in patients with advanced lung cancer, particularly distress associated with symptoms. Interventions for symptom management must be implemented at diagnosis because patients in this population may approach the end of life quickly	80 patients with either stage IIIb or IV lung cancer.	Descriptive, longitudinal.
Reville et al. (2010)	To explore Patient characteristics in hospitalized patients with lung cancer receiving usual care were compared to those referred to a new palliative care service.	Palliative care service (PCS) was consulted for 8% of all lung cancer patients most commonly to address end-of-life-issues. PCS patients were more likely to be at the end-of-life than usual care (UC) as evidenced by higher hospital mortality (31% versus 7%), higher intensive care (ICU) mortality (67% versus 16%) and more frequent discharge to hospice (41% versus 7%).	1476 patients with primary or secondary diagnosis of lung cancer	Retrospective study
Warren et al. (2011)	To compare care at the end of life for cancer patients between the United States and Canada in relation to end of life care	Rates of chemotherapy use were statistically significantly higher for Surveillance, Epidemiology, and End Results SEER-Medicare patients than Ontario patients in every month before death. During the last 30 days of life, fewer SEER-Medicare than Ontario patients were hospitalized	21,633 patients with lung cancer from USA and Canada	Prospective study
Van Laarhoven et al. (2011)	To assess coping strategies in treated and palliative-cancer patients no longer receiving anticancer treatment and to examine the relation of these coping strategies with QOL, depression, and hopelessness	In both curative and palliative patients, active coping strategies and acceptance were beneficial in terms of QOL, depression, and hopelessness, unlike avoidant coping strategies and venting of emotions. Palliative patients scored higher on the coping strategy, seeking moral support. Coping strategies were significantly correlated to QOL, depression, and hopelessness. However, this correlation differed in the curative and palliative, end-of-life care setting	151 patients with cancer	Descriptive research design
Leung et al. (2010)	To evaluate the change of quality of life and quality of death over time and between patients of long and short survival in a palliative care unit.	Although those with short survival had more physical symptoms during the first week, there was no difference in quality of life dimensions at admission, at 1 week, and at 2 days before death between survival groups. Physical conditions deteriorated with time but other dimensions continued to improve until death. Under comprehensive palliative care, patients with terminal cancer can have good quality of life and experience a good death even with short survival.	281 patients with cancer	Retrospective study

Table 1: Summary of the eight eligible articles for this review
(continued next page)

Cheng et al. (2008)	This study investigates the good death status of elderly patients with terminal cancer, comparing the differences in the degree of good death among elderly and younger groups, and exploring the factors related to the good death score.	The scores of individual items and of the good death scale were increased significantly in both elderly (n = 206, 56.3%) and younger (n = 160, 43.7%) groups from the time of admission to just prior to death. However, the elderly group had significantly lower scores in 'awareness' (f = -3.76, P< 0.001), 'propriety' (i = -2.92, P<0.01) and 'timeliness' (i = -2.91, P<0.01) than the younger group prior to death. The dilemma of truth-telling compromises the autonomy of the elderly patients with terminal cancer and consequently affects their good death scores.	366 patients with cancer	Non-experimental and cross-sectional.
Akechi et al. (2012)	To investigate concepts relevant to a good death in elderly adults with cancer.	Clinically significant differences in the concept of good death were observed for two domains and one component: not being a burden to others, role accomplishment and contribution to others. Only a few differences in the concept of good death existed between elderly and younger adults.	2595 cancer patients	Non-experimental and cross-sectional.

manner. Some of the previous studies used were Lazarus and Folkman's conceptual model of stress and coping, while another was based on Emanuel's Framework of a Good Death. On the other hand the most included articles were based on literature review as a framework to their studies.

The eligible articles were focused mainly on five variables or concepts. These concepts are: end-of-life, good death, quality of life, palliative care and coping. For measurements, analysis and interpretations of the various scales were used such as; COPE-Easy abbreviated version instruments to measure coping; Good Death Scale which is an appropriate clinical quality-of-dying instrument and derived from the perspectives of end-of-life care participants and includes the multiple domains of experience important to patients and families. The Palliative Performance Scale (PPS) was developed to measure physical status in palliative patients. The PPS assigns a value of 0-100 to five domains: ambulation, activity and evidence of disease, self-care ability, oral intake, and level of consciousness. The Hospice Quality of Life Index (HQLI) is a 28-item self-report instrument that measures psycho-physiologic, functional, and social spiritual well-being. Each item has a numeric rating scale (0-10), and an anonymous questionnaire covering 18 domains (physical and psychological comfort, dying in a favorite place, good relationship with medical staff, maintaining hope and pleasure, not being a burden to others, good relationship with family, physical and cognitive control, environmental comfort, being respected as an individual, life completion, natural death, preparation for death, role accomplishment and contribution to others, unawareness of death, fighting against cancer, pride and beauty, control over the future, and religious and spiritual comfort).

Sample Characteristics

The sample size in eight studies ranged from 80 to 21,633 participants of adult cancer patients, with age range between 18 to 65 years old. In terms of gender characteristics there were 47% male and 53% females in all selected articles, and the patients were diagnosed with different types of cancer but most articles were concerned with lung cancer in which this type was represent in 88% of total samples. About 53% of patients had secondary education level, while 23% were at primary and 24% at tertiary level of education. The articles were retrieved from different areas as following: four articles from the U.S.A. and Canada, two articles from Taiwan, one from Japan and one from the Netherlands. So the variation in sample characteristics will be helpful to confirm or to refuse the results of different studies in different areas in relation to end of life issues.

Results

Coping Strategies among Lung Cancer Patients

Spiritually, older adults express a need to practice their faith but often are limited by energy levels or social isolation. Religious beliefs and spiritual practices promote coping for patients with cancer at the end stage of their lives (Akechi et al. 2012). Patients who use positive religious coping strategies such as forgiveness, direction, helping, seeking support of clergy, surrender, having a benevolent view of religion, and connecting, report lower levels of depression, anxiety, and distress (Cheng et al. 2008; Hermann & Looney, 2011). It has been suggested that dying patients suffer from many types of loss, including physical, psychological, social, and existential (spiritual); and that they adapt to their losses through a cycle of three processes: comprehension, creative adaptation, and reintegration (Cheng et al. 2008; Reville

et al. 2010; Leung et al. 2010). As individuals approach the end of life, they may experience a change in their conceptualization of QOL as they adapt to their disease (often referred to as response shift). The extent to which patients adjust their perception of QOL is not known. Avoidant coping strategies did not seem beneficial for patients (Reville et al. 2010; Akechi et al. 2012). Also, coping effectiveness (more active, less avoidant coping) resulted in less hopelessness in the intervention group, suggesting that specific intervention strategies can mitigate hopelessness when facing advanced disease. Nevertheless, a medical approach of the problems of cancer patients often prevails, even when patients are at the end of their lives. For palliative patients, a negative association was observed between giving up one's goals and satisfaction with life, which, however, did not remain significant in the regression analysis. Also, denial and giving up one's goals were positively associated with depression and hopelessness (Buck, Overcash & McMillan, 2009). In fact, dying patients may receive invasive and inappropriate medical treatments in the days and hours before death, despite evidence of their poor prognosis. Understanding different trajectories of losses and adaptation in dying patients is helpful to individualize intervening strategies.

End of Life Outcomes

For patients diagnosed with advanced cancer, as death approaches, optimal health care would shift from life prolonging therapy to supportive care and symptoms control (van Laarhoven et al. 2011). The current findings suggest that the medical staff should consider the most appropriate and preferred decision-making model according to disease stage and the individual's characteristics, especially age, and that a passive or paternalistic decision-making model sometimes contributes to achieving a good death for patients, especially elderly adults, although the influence of cultural differences between countries, must be considered when discussing these findings, because large differences in individual values and preferred physician-patient relationships exist between these countries (Warren et al. 2011; Buck, Overcash & McMillan, 2009; van Laarhoven et al. 2011). The findings sufficiently support evidence of gaps in end-of-life care for patients with lung cancer to warrant further initiatives by our nascent palliative care team. A high number of uncontrolled symptoms and a great amount of physical and psychological distress have been reported for patients who are nearing the end of life (Cheng et al. 2008; Hermann & Looney, 2011; Leung et al. 2010). Although the literature examining QOL in patients near the end of life is small, patients in palliative care have been found to experience problems that affect all areas of their lives. Early work found that patients experience a dramatic decline in their QOL as they approach the end of life. Although understanding QOL in patients receiving hospice care is important, many individuals at the end of life never become hospice patients but still require care that will improve or maintain their QOL. For example, patients with advanced cancer seek treatment while the progression toward death continues.

Symptom experience and functional status are important components of QOL in patients near the end of life (Buck, Overcash & McMillan, 2009; Hermann & Looney, 2011; Warren et al. 2011). Symptom management is an essential aspect of care for patients near the end of life, including patients with advanced cancer. Patients with terminal disease have identified their most prevalent unmet need as symptom control. Small differences were observed between elderly and younger populations, which provides a relevant message to those involved in caring for terminally ill individuals with cancer; the essential care required to achieve an individual's good death may not differ markedly according to the individual's age, and the requirements for a good death of elderly adults do not necessarily differ from those of younger adults (Reville et al. 2010; Akechi et al. 2012; Cheng et al. 2008; Hermann & Looney, 2011).

Understanding the symptom experience, particularly symptom distress, is crucial to improving care for individuals near the end of life. Some palliative care providers focus more on physical than psychological and spiritual suffering of terminal cancer patients, even though psychological and spiritual issues seemed to be more relevant to quality of death at the end of life (Leung et al. 2010; Buck, Overcash & McMillan, 2009; van Laarhoven et al. 2011; Warren et al. 2011). In the geriatric cancer experience in the end-of-life model the symptom experience latent variable encapsulates the number of symptoms patients are experiencing, the severity level of those symptoms, and the distress levels patients report. The most frequently reported symptoms (more than 50%) were lack of energy, dry mouth (71%), pain (68%), lack of appetite (61%), shortness of breath (58%), and feeling drowsy (57%). The measurement of religious or spiritual needs may be more meaningful than religiosity or religious coping at the end of life. Integration of life experiences and acceptance of self facilitate a peaceful end of life (Cheng et al. 2008; Hermann & Looney, 2011; Leung et al. 2010).

Conclusion

The significance of this integrative review appears in two dimensions. Firstly, that the lung cancer patients have different ways of coping with the disease process; these coping strategies differ according to religion, finance and norms. So, the strategies differ between countries (Lee, Tsai & Lai, 2008). The oncology nurse should be able to stimulate the coping strategies for the patients with complete respect for the patients' differences.

Secondly, to achieve better care for dying patients is to decrease suffering through control of symptoms. Many symptoms can be managed effectively; therefore, an increase in QOL could be effected through appropriate intervention for the various symptoms that patients experience (Woo et al. 2011). So, the health care provider especially the oncology nurses have major responsibilities to understand the physical, psychological, social and financial symptoms.

Possible Implications

Given the results of our study, together with others, demonstrating that active coping strategies and the coping strategy, acceptance, were predictive for a better QOL and lower levels of depression and hopelessness in contrast to the coping strategy, venting of emotions, and the avoidant coping strategy, giving up, health care practitioners should treat cancer patients in a manner consistent with this evidence. Oncology nurses are in a key position to incorporate psychosocial care in their daily practice, thereby influencing patients' QOL. Although the patient's perspective is essential in QOL assessment, not all patients take the initiative of sharing their currently perceived QOL with the health care provider. Specific attention to differences in coping strategies between cancer patients in the curative and the palliative, end-of-life care setting is warranted, especially in the palliative care setting, patients may rely on seeking moral support from family and friends as a coping strategy, whereas, for example, active coping strategies may be more beneficial. This is not only of importance for nurses as professional caregivers of palliative patients, but also because nurses have an important role to play in communication with and education of family and friends.

Recommendations

The controlling of patients symptoms is a crucial point during the care of patients near end of life, so patients with serious illness at the end of life should be regularly evaluated for pain, dyspnoea, and depression. Other significant concerns for patients, families, and caregivers are discontinuity in care and heavy caregiver burdens. Individualized evaluation and care can best address these concerns, although most issues are common to all patients. Oncology nursing should ensure that all patients with serious illness complete advance care planning. This planning should take place as soon as possible once a patient is identified as having a serious illness at end of life. Specific issues that may be pertinent, depending on the diagnosis and other factors, include identifying the patients' religious, race and financial status because that is helpful during coping strategies assessment, supporting patient's family, dementia management, tube feeding, continuation or discontinuation of chemotherapy in cancer patients, and whether to deactivate implantable cardioverter defibrillation in patients with end-stage congestive heart failure.

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Impact of Fungal Infections Among Neutropenic Adult Patients With Acute Myeloid Leukemia: Review

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Introduction

Acute Myeloid Leukemia is a clonal disorder of hematopoietic stem cells characterized by the inhibition of differentiation and the subsequent accumulation of cells at various stages of incomplete maturation, and by reducing production of healthy hematopoietic elements (Ferrara & Schiffer, 2013). Leukemia in general is the fourth cancer among Jordanian males and the fifth cancer among Jordanian females with a percentage of 8.3 and 4.5 respectively (cancer incidence in Jordan 2009). Few studies conducted in Jordan discuss fungal infection among AML patients with neutropenia.

Despite significant advances in supportive care, infectious complications continue to be a significant cause of morbidity and mortality among leukemia patients. Invasive fungal infections (IFIs) are a leading cause of mortality and morbidity among patients with hematological malignancies and prolonged neutropenia after chemotherapy (Bohme, Ruhnke, Buchheidt, Cornely, Einsele, Enzensberger, & Maschmeyer, 2009). Patients with febrile neutropenia as well as patients with hematological malignancies, with incidences of 13%-21% have been reported for fungal infections (Auberger, 2008). IFI was reported in 23.5 patients diagnosed with AML, and IFI-related mortality was 56.9% in a study conducted in Germany (Hahn, Glasmacher, Muckter, Schmitz, Kraemer, Gunter, Lilienfeld-Toal, 2010).

Invasive aspergillosis (IA) is a life-threatening infection among the immunocompromised patients, mainly in acute leukemia; 57% of patients were neutropenic at the time of diagnosis. Half of them received a recent course of high-dose cytosine arabinoside (Kazan, Maertens, Herbrecht, Weisser, Gachot, Vekhoff, & Cordonnier 2011).

Methods

To critically examine the body of knowledge related to fungal infections among neutropenic adult patients with acute myeloid leukemia, an integrative literature review was conducted using the electronic databases of PUBMED, Nursing@OVID, Science Direct and Springer

for articles published between 2008 and 2012 using fungal infection, with acute myeloid leukemia, and neutropenia as key words for the search. The inclusion criteria for the articles to be studied was:

- 1- included population of patients with hematological malignancies especially AML
- 2- investigate invasive fungal infection associated with neutropenia
- 3- written in English language
- 4- research based studies

The exclusion criteria for the articles was

- 1- Any nonhematological malignancy.
- 2- Pediatric population.
- 3- Not written in English
- 4- The patient had immunodeficiency virus

Based on the inclusion criteria 8 articles published between 2008 and 2012 were selected and form the backbone of the review; the studies were conducted mainly in Europe in special centers dealing with hematological malignancies except one conducted in Brazil.

Methodological characteristics:

The 8 studies which composed the body of literature were quantitative. Half of them were retrospective studies; one of them was a descriptive correlational study, and one quasi experimental study. The rest of the articles were meta analysis. Although only eight articles were used, they covered a wide variation in case situations, the method of data collection used in the studies was observation in general, the major ideas in the articles were the usage of antifungal therapy for invasive fungal infection, and the state of neutropenia for the patients who participated.

Sample characteristics:

The sample sizes for the eight studies ranged between 21 to 1059 patients, and the meta analysis size was 114 and 141 article, the population was adults with hematological malignancies and who had undergone HSCT. The

participants in the studies were neutropenic at the time of the study conduction. The studies were conducted in many European special centers, except one which was conducted in Brazil. The main hematological malignancies studied in the research were acute myeloid leukemia, plus other malignancies like multiple myeloma, and Hodgkins lymphoma.

Results

Despite the advances in antibiotic prophylaxis among leukemia patients invasive fungal infection is still a problem facing neutropenic patients. In a retrospective study conducted in Germany 8.8% of neutropenic patients developed an invasive fungal infection (IFI) during chemotherapy; pulmonary IFI accounted for 38.1% of the infected cases (Hahn, Glasmacher, Muckter, Schmitz, Kraemer, Gunter, ... Lilienfeld-Toal, 2010). The risk of fungal colonization declined significantly in association with antifungal prophylaxis, also antifungal prophylaxis was associated with significantly reduced risk of developing systemic fungal infection. The effect of antifungal prophylaxis was of clinically important outcomes to patients with neutropenia after chemotherapy. (Panayiotis, Ziakas, Irene, Kourbeti, Voulgarelis, & Mylonakis, 2010). In another study conducted in France 57% of neutropenic patients were infected with gut aspergillosis although they received antifungal prophylaxis (Kazan, Maertens, Herbrecht, Weisser, Gachot, Vekhoff, & Cordonnier 2011). Neutropenic patients with proven pulmonary IFI who developed a second episode of IFI had substantially longer median neutropenia when compared with those with no further IFI. Patients who received cytrabine had a higher risk for developing a second episode of IFI (Oliver, Cornely, Bohme, Reichert, Reuter, Maschmeyer, & Karthaus.2008). Some clinician administered empirical antifungal antibiotics were considered for patients with persistent or recurrent fever after 4-7 days of antibiotics and whose overall duration of neutropenia was expected to be more than 7 days (Gedik, Yildirma, Simsek, Aydin, Demirel, Yokus, Arica. 2010). Furthermore usage of protective environmental conditions during the prior IFI were less likely to develop a recurrent IFI (Oliver, Cornely, Bohme, Reichert, Reuter, Maschmeyer, & Karthaus.2008). Use of a protective environment in a quasi experimental study decreased risk of fungal infections (Stoll, Mariano DA, Menegat, Split, & Moreira .2012). Although antifungal prophylaxis was associated with a significantly reduced risk of proven systemic Fungal infection, the risk of mortality from proven fungal infections was unaffected. In the prophylaxis arms, 30 of 63 evaluable patients with proven systemic fungal infections died (Panayiotis, Ziakas, Irene, Kourbeti, Voulgarelis, & Mylonakis, 2010).

Conclusion

Invasive fungal infection is still a major cause of increased mortality and morbidity for hemato-oncology patients and the problem arises because the patients are immunocompromised and at high risk of developing invasive fungal infections which may delay receiving

chemotherapy. Further recommendations are needed to provide a good protective environment and to develop guidelines to manage neutropenia patients who are at high risk of developing infection.

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Effects of Spirituality in Breast Cancer Survivors: Critique of Quantitative Research

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Introduction

Quantitative researchers believe that it is possible to focus on objective reality within the world. For many qualified nurses and nursing students research is research, and it is often quite difficult to grasp what others are referring to when they discuss the limitations and or strengths within a research study. Research texts and journals refer to critiquing the literature, critical analysis, reviewing the literature, evaluation and appraisal of the literature all of which are, in essence, the same thing (Bassett and Bassett, 2003).

Terminology in research can be confusing for the novice research reader where a term like 'random' refers to an organized manner of selecting items or participants, and the word 'significance' is applied to a degree of chance. The elements of critiquing can help the researcher to focus on what to expect from research by asking questions regarding the research qualifications to demonstrate the skills of research in presenting the study (Ryan-Wenger, 1992).

These questions are similar to those asked when critiquing a quantitative study and are discussed in part I of this article (Coughlan et al, 2007). The researcher should explain next why the study needs to be undertaken and what he/she expects to glean from it.

The researcher should also state why the study will be of significance and how it will add to the general body of information on the phenomenon (Connell Meehan, 1999).

At this stage the researcher should also justify the use of a qualitative approach and the qualitative methodology to be used (Connell Meehan, 1999). After reading the research paper, individual practitioners would be able to enhance their practice and contribute to evidence-based practice by critiquing the research. Thus the aim of this article is to take a step-by-step approach to critiquing quantitative

Abstract

A research critique is a careful appraisal of the strengths and weaknesses of the study. Critique of quantitative study involves an in-depth review of how each step of the research was undertaken and conducted. The ability to evaluate the quantitative design research article is a necessary skill for practitioners and researchers of all disciplines, including nursing, in order to judge the integrity and usefulness of the evidence and conclusions made in an article. In general, this skill is automatic for many practitioners and researchers who already possess a good working knowledge of research methodology, including: hypothesis development, sampling techniques, study design, testing procedures and instrumentation, data collection and data management, statistics, and interpretation of findings. However, research critique is a mechanism to provide feedback for improvement and development.

Key words: quantitative, critique, methodology.

research in an attempt to help nurses and students demystify the process and decode the terminology.

Methods

When it comes to critiquing research, students can call upon various frameworks to assist them. There are frameworks that have been designed to deal solely with quantitative research (and can only be used for that purpose). Table 1 (pages 25 and 26) lists some of the most common elements to critiquing a quantitative research study.

Quantitative Research Critiquing

Purpose

In her article, *Effects of Spirituality in Breast Cancer Survivors*, Martha Meraviglia. (2006). *Oncology Nursing Forum*, 33, E1-E7, outlines a descriptive, correlational, cross-sectional study, purposed to examine how the spiritual concepts of meaning in life and prayer mediate the impact of breast cancer on physical and psychological well-being. Breast cancer has been studied by many authors in different approaches and objectives worldwide to control prevalence of breast cancer by strong and clear strategies such as breast self examination.

The researchers have discovered that spiritual status helps the patients to tolerate the problem of their physical and psychological status when they are newly diagnosed and treated for cancer. So most the studies in this field try to understand the relationships between the Spiritual, physical, and psychological and patient's well-being, we can consider it as a part of a wider study that relates to breast cancer.

The key findings of this study are clear and explain variables that are used by the author:

- A.** Meaning in life and prayer are associated with greater psychological well-being.
- B.** Meaning in life mediates the effects of breast cancer on well-being.
- C.** Aspects of spirituality, such as meaning in life and prayer, lessen the impact of breast cancer.

Research Problem

The problem statement is not clearly identified. It can be written this way: is there any correlation between spirituality, physical, and psychological status and the sense of well-being among women who have had breast cancer.

In the findings of the study, the author mentioned that review of a correlation matrix identified a significant relationship between study variables. For psychological responses, it shows that functional status was a significant predictor of the mediating variable, meaning in life. For functional status as a significant predictor of the outcome variable, psychological well-being, prayer was positively related to psychological well-being but not significantly related to symptom distress.

The problem statement is significant to nursing; because it is adding new knowledge to the nurse about the importance of spirituality in the sense of well being in women who have breast cancer. Oncology nurses are in a unique position to provide comfort and direction during a critical time when women are initially diagnosed with breast cancer and receiving treatment.

Theoretical Framework:

The author used a conceptual framework, and then she applied the research problem into the framework which contains three elements: Spirituality, Impact of cancer, and Well-being, She then identifies the direction of relations that connect the spirituality with meaning in life and prayer and effect of well-being physically and psychologically.

The variable defined by Cleary in Figure 2 contains all variables and supports Cleary's explanation about relation between variables (Figure 2. ?Diagram of the Mediator Research Model)(Meraviglia, 2006, p.4).

A. Meaning in life: The Life Attitude Profile-Revised (LAP-R) was used to assess one of the spiritual variables, meaning in life. By Reker and Peacock 1981 (Meraviglia, 2006, p. 4).

B. Prayer: The Adapted Prayer Scale (APS) was based on Poloma and Pendleton's (1991) prayer scale and was changed to apply to all patients with cancer. The APS has been used effectively in several studies of adults with cancer (Meraviglia, 2006, p.4).

C. Physical responses: The Symptom Distress Scale (SDS) is a 14-item scale assessing patients' degree of discomfort related to appetite, nausea (presence and intensity), insomnia, pain (presence and intensity), fatigue, bowel patterns, concentration, dyspnoea, appearance, outlook, cough, and mobility. (Meraviglia, 2006, p.4)

D. Psychological responses: The Index of Well-Being, a nine-item semantic differential scale, assesses the cognitive and affective dimensions of patients' sense of well-being (Meraviglia, 2006, p.4)

The framework is clear and defines the relationship between variables of this study, and the results of this study were interpreted in reference to the conceptual framework so it represents a strong relationship.

Variables and Hypotheses

The effect of spirituality, physical, and psychological, on the sense of well-being among women is measured. The mediator variable is the meaning in life, so its relevant to the research problem stated in the 1st part of this critique, since we are talking about physical and psychological well being so the role here is for the nurse to improve and enhance patient well being, because the role of nursing is to care for patients, although there is no hypothesis in this study.

Table 1: Guidelines for Critiquing a Quantitative Research Study

Elements	Steps of Critique
Title	<ul style="list-style-type: none"> • Is the title a good one, succinctly suggesting key variables and the study population?
Abstract	<ul style="list-style-type: none"> • Does the abstract clearly and concisely summarize the main features of the report (problem, methods, results, conclusions)? • Does the review provide a state-of-the-art synthesis of evidence on the research problem? • Does the literature review provide a solid basis for the new study?
Statement of the problem	<ul style="list-style-type: none"> • Is the problem stated unambiguously and is it easy to identify? • Does the problem statement build a cogent and persuasive argument for the new study? • Does the problem have significance? • Is there a good match between the research problem and the paradigm and methods used? • Is a quantitative approach appropriate?
Hypotheses or research questions	<ul style="list-style-type: none"> • Are research questions and/or hypotheses explicitly stated? If not, is their absence justified? • Are the questions and hypotheses appropriately worded, with clear specification of key variables and the study population? • Are the questions/hypotheses consistent with the literature review and the conceptual framework?
Literature review	<ul style="list-style-type: none"> • Is the literature review up to date and based mainly on primary sources? • Does the review provide a state-of-the-art synthesis of evidence on the research problem? • Does the literature review provide a solid basis for the new study?
Conceptual/theoretical framework	<ul style="list-style-type: none"> • Are key concepts adequately defined conceptually? • Is there a conceptual/theoretical framework, rationale, and/or map, and (if so) is it appropriate? If not, is the absence of one justified?
Protection of participants' rights	<ul style="list-style-type: none"> • Were appropriate procedures used to safeguard the rights of study participants? • Was the study subject to external review? • Was the study designed to minimize risks and maximize benefits to participants?
Research design	<ul style="list-style-type: none"> • Was the most rigorous possible design used, given the purpose of the research? • Were appropriate comparisons made to enhance interpretability of the findings? • Was the number of data collection points appropriate? • Did the design minimize biases and threats to the internal and external validity of the study (e.g., was blinding used, was attrition minimized)?

Table 1:(Reference for table):

1. <http://libguides.lhl.uab.edu/content.php?pid=196639&sid=1666372>

2. Polit, D.F., & Beck, C.T. (2008). Nursing research: Generating and assessing evidence for nursing practice. St. Louis: Lippincott, Williams & Wilkins.

(Table continued next page)

Population and sample	<ul style="list-style-type: none"> • Was the population identified and described? • Was the sample described in sufficient detail? • Was the best possible sampling design used to enhance the sample's representativeness? • Were sample biases minimized? • Was the sample size adequate? • Was a power analysis used to estimate sample size needs?
Data collection and measurement	<ul style="list-style-type: none"> • Are the operational and conceptual definitions congruent? • Were key variables operationalized using the best possible method (e.g., interviews, observations, and so on) and with adequate justification? • Are the specific instruments adequately described and were they good choices, given the study purpose and study population? • Does the report provide evidence that the data collection methods yielded data that were high on reliability and validity?
Procedures	<ul style="list-style-type: none"> • If there was an intervention, is it adequately described and was it properly implemented? • Did most participants allocated to the intervention group actually receive the intervention? • Was data collected in a manner that minimized bias? • Were the staff who collected data appropriately trained?
Data analysis	<ul style="list-style-type: none"> • Were analyses undertaken to address each research question or test each hypothesis? • Were appropriate statistical methods used, given the level of measurement of the variables, number of groups being compared, and so on? • Was the most powerful analytic method used (e.g., did the analysis help to control for confounding variables?)? • In intervention studies, were analyses performed using the intention-to-treat approach? • Were Type I and Type II errors avoided or minimized?
Findings	<ul style="list-style-type: none"> • Are the findings adequately summarized, with good use of tables and figures? • Are findings reported in a manner that facilitates a meta-analysis and with sufficient information needed for evidence-based practice?
Interpretation of the findings	<ul style="list-style-type: none"> • Are all major findings interpreted and discussed within the context of prior research and/or the study's conceptual framework? • Are the interpretations consistent with the results and with the study's limitations? • Does the report address the issue of generalizability of the findings?
Implications and recommendations	<ul style="list-style-type: none"> • Do the researchers discuss the implications of the study for clinical practice or further research and are those implications reasonable and complete?
Summary and Conclusion	<ul style="list-style-type: none"> • Despite any identified limitations, do the study findings appear to be valid- do you have confidence in the truth value of the results? • Does the study contribute any meaningful evidence that can be used in practice or that is useful to any discipline?

(Table 1 continued)

The mean to measure the variables are appropriate because the author used:

- Life attitude profile-revised to assess spiritual variables and meaning of life.
- Adapted prayer scale that was designed to apply to patients with cancer
- Symptom distress scale to assess degree of discomfort in patient
- Index of well-being to assess the cognitive and affective dimension of a patient's sense of well-being.

Literature Review

The author in this study, reviewed a sufficient amount of literature; she can define the variables and the concepts of this study from different articles; spirituality, meaning of life and prayer (Meraviglia, 2006, p.1,2) and she also represents different opinions like when she wrote the relationship between meaning of life and spirituality she mentioned more opinions (Meraviglia, 2006, p.2). The author didn't write her literature review critically; also she didn't represent the setting under which she collected and reviewed the literature, and that increases the possibility of bias from the researcher if she collects the literature from one source, because if she is looking in different sources she will find concentrated information about her subject.

The author in this study reviews primary sources; she didn't mention that she reviewed a secondary source; also the time interval of that literature she collected ranged from 1986-2005.

Sample, Settings, and Ethical Consideration

The sample was collected from urban and rural areas in central Texas and the inclusion criteria were as following:

- a. Women were aged 21 years or older
- b. Diagnosed with breast cancer.
- c. Able to read and write English.
- d. Were in a fair state of health.

The sample was selected by referral from nurses and physicians, also flyers were posted in oncology, radiology and breast cancer centers, and any women recruited to participate and who met the inclusion criteria were contacted by the investigator, and a questionnaire was given to the participant with consent form and postage paid for return mail give to the participant. If the questionnaire was returned within three weeks from the first contact, the participant received a cheque of \$10, and if the questionnaire wasn't returned within three weeks of the first contact a follow up postcard was mailed to the participant.

The sample was just one group, and a questionnaire was sent and returned so there is no group allocation in this study, and the sample size was 84 women. The sample size was sufficient if we used the Thorndike's rule of 10-20 participants for each variable and we have 4 main

variables in this study mentioned above so the sample size ranged from 40-80 participants.

The sample size achieved the study aim because the result was significant in the following tables:

Table 3. Mediating Model of Meaning in Life on Psychological Responses.

Meaning in life (P= 0.000)

Table 4. Mediating Model of Meaning in Life on Physical Responses.

Functional status and meaning in life (P= 0.000)

Table 5. Mediating Model Using Multivariate Delta Method Functional status and meaning in life (P= 0.000)

The information provided was easy to follow up e.g. spiritual well-being, spiritual awareness, and spiritual health, Meaning in life (work and recreation), and prayer (communication with God), physical response and psychological responses.

The sample was suitable to the aim of study "to examine how the spiritual concepts of meaning in life and prayer mediate the impact of breast cancer on physical and psychological well-being", as the author is talking about breast cancer and the incidence of this disease increased in women more than men; also the author includes the age of women; because breast cancer is the leading cause of death among women younger than 55 years.

The researcher distinguishes the mediator effect that related to breast cancer only and not to many other causes, and required reading and writing in English to be sure the participant themselves filled out the questionnaire to keep the originality of the data. The geographical data for this study was from the rural and urban settings in central Texas. The author in this study mentioned the approval from the appropriate institutional review board (Meraviglia, 2006, p.3). Informed consent was obtained from the participants of the study, but she didn't mention the total number of posted questionnaires nor the number of the returned ones.

The ethical issues are: a cover letter contained the information about author, described the study, and asked the women to participate. But there was an unethical part in the study which is "the author gave 10 dollars to those who participated in the study".

Design

The author in this study used a descriptive correlational cross-sectional design, and this design is appropriate to answer research questions because the author also used a convenience sample which is meant that there were specific characteristics required to answer specific questions which are related to the women's spirituality, physical and psychological responses and the well-being of women with breast cancer, as the author aimed.

There was no controlling over the threats to internal or external validity; also there's no control group because

the author used just one group, although this is a descriptive study so there is no need for a control group for descriptive study.

There was no control over confounding variables because the sample was selected by convenience sampling, so there was no randomization in this study. It was one group only; in my opinion there is not adequate enough control in this study because there was only one group. To make a conclusion the researcher did not mention controlling for any other variables in this paper. The author takes limitations into account as a recommendation for further exploration such as other areas that need further exploration; no mediating effects were found for the spiritual concept, prayer, or physical or psychological well-being and the need for further exploration about influences of the aspects of spirituality is warranted in a large sample of breast cancer patients.

Data Collection

The author collected data by structured method, questionnaire, survey, and scale.

The author describes in detail data collection methods by using the following instruments:

- The Background Information Survey.
- The Characteristics of Cancer survey.
- The Adapted Prayer Scale (APS)
- The Symptom Distress Scale.
- Psychological responses: The Index of Well-Being,
- Meaning in life: The Life Attitude Profile-Revised (LAP-R)
- Prayer: The Adapted Prayer Scale (APS)

Reliability and validity of this study was accomplished by the following information and calculations

- Correlation coefficient ranged between -1.00 and +1.00 which is above .70 and that is considered satisfactory
- More items means more reliability but not too long
- The internal consistency reliability for the meaning of life (LAP-R)
- The point is (0.70-0.85); the result is acceptable (0.77-0.88)
- APS - the point is 0.96 and the result is acceptable from (.77-.95)
- SDS IS (0 0.90)
- Index well being is Cronbach's alpha which was acceptable at (0.95.)

The author described data collection method Cleary and used 2 surveys; The Background Information Survey was to assess the demographic characteristics of age, ethnicity, education, employment, marital status, religion, satisfaction with income, and economics of daily living. The Characteristics of Cancer survey assessed the type of breast cancer, metastatic of disease, and 4 scale; Prayer: The Adapted Prayer Scale (APS) was based on Poloma and Pendleton's (1991) prayer scale and was changed to apply to patients with cancer.

Physical responses: The Symptom Distress Scale (SDS) is a 14-item scale assessing the patients' degree of discomfort related to appetite, nausea (presence and intensity), insomnia, pain (presence and intensity), fatigue, bowel patterns, concentration, dyspnoea, appearance, outlook, cough, and mobility.

Psychological responses: The Index of Well-Being, a nine-item semantic differential scale, assesses the cognitive and affective dimensions of the patients' sense of well-being.

Meaning in life: The Life Attitude Profile-Revised (LAP-R) was used to assess one of the spiritual variables, meaning in life.

The data collection method in this study was appropriate because the collection method covers and represents all of the variables in the research, the collection of Meaning in life, prayer, physical responses can measure spirituality and its effect on psychological responses in terms of well-being.

Data Analysis

Multiple regression procedure was used as the standard method to find the effect of the predictor's variables on the outcome variables so the procedures (data analysis) in general were clear.

The processes of data analysis are to find the relation between the predictors and outcome variables and it found that there were some variables indirectly influenced on relation between all variables, also comparing her method by other methods proposed by some authors.

From this study the researcher answered most questions suggested in her study.

Example:

- In terms of spiritual characteristics, 71% of the women believed they had a close relationship with God.
- Creational analysis of outcome variables (i.e., physical and psychological responses) to sample characteristics showed women with lower symptom distress within the previous month were employed ($r = 0.30$), had lower stages of cancer ($r = 0.30$), and had no metastasis at diagnosis ($r = -0.27$). Women who reported higher psychological well-being also reported lower stages of breast cancer ($r = 0.27$), higher functional status ($r = 0.32$), and closer relationships with God ($r = 0.37$).
- The meaning in life and prayer to sample characteristics; those reporting more meaning in life were older ($r = 0.32$), had better functional status ($r = 0.35$), reported closer relationships with God ($r = 0.23$), and had greater satisfaction with their income ($r = 0.25$).
- Women with higher prayer scale scores reported closer relationships with God ($r = 0.84$), lower education levels ($r = -0.37$), and less income to meet their needs ($r = -0.24$).

- Meaning in life was positively related to psychological well-being ($r = 0.66$)
- The personal meaning index was positively related to psychological well-being ($r = 0.70$) and negatively related to symptom distress ($r = -0.25$)
- Prayer was positively related to psychological well-being ($r = 0.36$) but not significantly related to symptom distress.

The descriptive statistics such as frequency, mean, standard deviation were used to summarize the data for the variables.

The mean and standard deviation are not clear in this study to decide whether these measurements are suitable or not. So I think it wasn't appropriate; measure of central tendency mean, median, mode, and percentile are not presented; also the measurement variability standards deviation variance coefficients of variance range are not presented.

The descriptive statistics mean and standard deviation are not clear in tables as shown in this study; also they weren't presented in the text or in graph and table, or in inferential statistics using delta method in multivariate such as confidence interval, testing hypothesis presented in different response variables.

Inferential statistics such as regression analysis in multivariate case with estimation of the parameter with p value standard error F test are used to decide a significance or non significance about the parameter.

The degree of freedom and level of significance are used as function of the p value to find the significance or not, which is equivalent with the degree of freedom and level of significance.

Statistical methods that are used in this research are parametric test multiple regression multivariate method F test t test assuming that data is normally distributed without checking the normality assumption.

The regression model used in this research was appropriate and the corresponding testing also suitable to find the relation between the variables and validate the models and power analysis for the sample, but the sample size as shown in this research was not sufficient to obtain unbiased estimators about the parameters.

The statistical testing method used was F testing through the regression model and associated with P value. The result in this research discussed and stated the conclusion and gave recommendation points in a future study, such as sample size, is not sufficient. The results are presented in both text and tables with P values which are presented in Table 1.

Discussion and Interpretation of Findings

The discussion part fits with the data because the author discusses all variables that have been analyzed and she

mentioned the important finding of the study such as the mediating effect of the spirituality concept, meaning in life, on psychological well being. The finding indicates that meaning in life mediated the impact of breast cancer on the physical and psychological well-being of women. The author discussed research findings in regard to previous research such as:

- Baron and Kenny's (1986) test for mediation showed that meaning in life decreased the impact of current functional status on psychological well-being as well as lessened the influence of functional status on physical well-being.
- The influence of the spiritual concept was examined further using statistical tests recommended by MacKinnon et al. (2002), which confirmed that meaning in life positively mediated the impact of breast cancer on women's psychological well-being.
- Positive relationships between aspects of spirituality and well-being among patients with cancer (Gall & Cornblat, 2002; Thompson & Pitts, 1993).
- In addition, the mediation effect of meaning in life on well-being has been reported elsewhere (Meraviglia, 2004; Reker & Butler, 1990).
- Others have reported that prayer activities and experiences are beneficial during difficult situations like dealing with cancer (Gall & Cornblat, 2002; Meraviglia, 2004).

The author discusses the finding in regard to conceptual framework by using a diagram of the mediator of research model. A number of limitations to the present study need to be addressed:

Firstly, the sample was self-selected and thus could be biased toward breast cancer survivors who were interested in spirituality and its role in coping with cancer. Secondly, a number of analyses were conducted, which increased the possibility that some findings may have occurred by chance alone (i.e., type I error). Thirdly the sample size, although adequate for the study, may limit the effect of the mediating variables, meaning in life and prayer, on physical well-being.

Implication for practice: The author mentioned recommendation to nursing specialist oncologist nursing should provide holistic care by encouraging women diagnosed with breast cancer to explore aspects of spirituality that are important to them. Additionally, nurses should assist women in examining their feelings, such as meaninglessness or loneliness, which are affecting their sense of physical or psychological well-being, and these recommendations should be appropriate to oncologist nursing to elevate the well-being of patients and give them positive effects on health that include physical psychological response.

Implications of the Study

The sample was a non-probability convenience sample that means we can't use the sample statistics to estimate population parameters. The researcher mentioned the

outcome of the result and did not mention sampling and procedure in the conclusion.

Implication of study by author is: The findings support healthcare providers encouraging of women diagnosed with breast cancer to explore their spirituality as an effective resource for dealing with the physical and psychological responses to cancer.

Oncology nurses should provide holistic care by encouraging women diagnosed with breast cancer to explore aspects of spirituality that are important to them. Additionally, nurses should assist women in examining their feelings, such as meaninglessness or loneliness, that are affecting their sense of physical or psychological well-being and the findings support healthcare providers encouraging women diagnosed with breast cancer to explore their spirituality as an effective resource for dealing with the physical and psychological responses to cancer.

Evaluating Summary

In this study and in my opinion I see that the use of conceptual framework, and variables are clear and sufficient; also it represents the significance of the study. The literature review is sufficient, and design fits the research problem; the implications and limitations are clearly defined. All these are strong points.

The weak points, in my opinion is as follows: the research problem, hypothesis and research question weren't directly mentioned, the literature review wasn't written critically, using convenience sampling for this study, also using money was a way to enhance participation in her study.

Summary and Conclusions

The development of critiquing skills should assist pre-registration students with relevant assignments. They should also help practitioners to determine if a piece of research is relevant and suitable to be implemented in their practice. The skills outlined in this paper are also essential prerequisites for those intending to undertake a critical review of literature, and begin their own programme of research, or undertake systematic reviews of research.

As practitioners gain a deeper understanding of critiquing a single piece of research, they should consider critiquing several research studies on a particular topic, searching for common themes; they could then write a critical review of the literature on that chosen topic.

As with a quantitative study, critical analysis of a qualitative study involves an in-depth review of how each step of the research was undertaken. Because of the subjective nature of qualitative research it is often regarded as more difficult to critique.

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