Mental Adjustment and Quality of Life in Breast Cancer Patients Receiving Operations and Chemotherapy, the Socialist Republic of Vietnam

การปรับตัวทางจิตและคุณภาพชีวิตในผู้ป่วยมะเร็งเต้านมที่ได้รับการผ่าตัดและเคมีบำบัด สาธารณรัฐสังคมนิยมเวียดนาม

หวง ธิ	เหงียน*	Huong Thi	Nguyen*
ชมพูนุท	ศรีรัตน์**	Chomphoonut	Srirat **
จินดารัตน์	ชัยอาจ**	Jindarat	Chaiard**

Abstract

Patients with breast cancer have to adjust to the effects of the disease and the treatments received. The ways they adjust impacts on their quality of life. This descriptive correlational research aimed to identify types of mental adjustment, quality of life and the relationship between mental adjustment and quality of life among breast cancer patients undergoing operations and chemotherapy. Purposive sampling was used to select 150 participants who met the inclusion criteria at Hanoi Oncology Hospital, the Socialist Republic of Vietnam. The research instruments included a demographic data record form, the Mini-Mental Adjustment to Cancer (MAC) and the Functional Assessment Cancer Therapy - Breast Cancer version 4 (FACT-B) questionnaire. Data were analyzed using descriptive statistics and Spearman's Rank – order correlation coefficient.

The study results indicated that:

1. Five types of mental adjustment were used. They were helplessness/ hopelessness, anxious preoccupation, cognitive avoidance, fighting spirit, and fatalism. The mean scores of these items were 2.65, 2.64, 2.45, 2.31 and 2.64, respectively.

2. The mean score of Quality of life of FACT-B was 72.78 (SD = 21.46).

3. Fighting spirit and fatalism had a positive correlation with quality of life (r_s = .68, $p < .01$; r_s = .62; $p < .01$, respectively). Helplessness/hopelessness had a negative correlation with quality of life (r_s = -.71, $p < .01$).

The results of this study provide a baseline of information for clinical nurses to enhance the quality of life of patients undergoing operations and chemotherapy through promoting effective mental adjustments.

Keywords: Mental adjustment, Quality of life, Breast cancer receiving operations and chemotherapy

* Master's thesis, Master of Nursing Science Program (International Program), Faculty of Nursing, Chiang Mai University

**Corresponding Author, Graduate Student of Nursing Science program (International Program), Faculty of Nursing, Chiang Mai University; e-mail: tamcoi.nguyen@gmail.com

***Assistant Professor, Faculty of Nursing, Chiang Mai University

Received 6 October 2021; Revised 16 November 2021; Accepted 2 December 2021

บทคัดย่อ

ผู้ป่วยมะเร็งเต้านมต้องปรับตัวให้เข้ากับผลที่เกิดขึ้นจากโรคและการรักษาที่ได้รับ วิธีการปรับตัวส่งผลต่อคุณภาพชีวิตของผู้ป่วย วัตถุประสงค์ของการวิจัยเชิงพรรณนาหาความสัมพันธ์นี้เพื่อระบุประเภทของการปรับตัวทางจิตและคุณภาพชีวิต และศึกษาความสัมพันธ์ระหว่างการปรับตัวทางจิตและคุณภาพชีวิตในผู้ป่วยมะเร็งเต้านมที่ได้รับการผ่าตัดและเคมีบำบัด ใช้การสุ่มตัวอย่างแบบเจาะจงเพื่อคัดเลือกกลุ่มตัวอย่างจำนวน 150 ราย ที่มีคุณสมบัติตรงตามเกณฑ์ จากโรงพยาบาลมะเร็งวิทยาฮานอย สาธารณรัฐสังคมนิยมเวียดนาม เครื่องมือที่ใช้ในการวิจัยประกอบด้วย แบบฟอร์มข้อมูลส่วนบุคคล แบบวัดการปรับตัวทางจิตฉบับสั้น และแบบวัดคุณภาพชีวิตผู้ป่วยมะเร็งเต้านมรุ่นที่ 4 วิเคราะห์ข้อมูลโดยใช้สถิติเชิงพรรณนา และการทดสอบสัมประสิทธิ์สหสัมพันธ์เชิงอันดับแบบสเปียร์แมน

ผลการศึกษาพบว่า

1. การปรับตัวทางจิตทั้ง 5 ประเภทที่ใช้ได้แก่ หมดหนทาง/ สิ้นหวัง หมกมุ่นกลุ้มกังวล เลี่ยงการเผชิญกับการรู้คิด จิตวิญญาณการต่อสู้ และความเชื่อในโชคชะตา โดยมีค่าเฉลี่ย เท่ากับ 2.65, 2.64, 2.45, 2.31และ 2.64 ตามลำดับ

2. ค่าเฉลี่ยของคะแนนคุณภาพชีวิตของผู้ป่วยมะเร็งเต้านม เท่ากับ 72.78 (SD = 21.46)

3. จิตวิญญาณการต่อสู้และความเชื่อในโชคชะตา มีความสัมพันธ์ทางบวกกับคุณภาพชีวิต (r_s = .68, p < .01; r_s = .62; p<.01 ตามลำดับ) หมดหนทาง/ สิ้นหวัง มีความสัมพันธ์ทางลบกับคุณภาพชีวิต (r_s = -.71, p < .01)

ผลการศึกษานี้เป็นข้อมูลพื้นฐานสำหรับพยาบาลในคลินิกเพื่อส่งเสริมคุณภาพชีวิตของผู้ป่วยมะเร็งเต้านมที่ได้รับการผ่าตัดและเคมีบำบัด โดยการสนับสนุนให้มีการปรับตัวทางจิตอย่างมีประสิทธิภาพ

คำสำคัญ: การปรับตัวทางจิต คุณภาพชีวิต มะเร็งเต้านมที่ได้รับการผ่าตัดและเคมีบำบัด

* วิทยานิพนธ์หลักสูตรพยาบาลศาสตรมหาบัณฑิต (หลักสูตรนานาชาติ) คณะพยาบาลศาสตร์ มหาวิทยาลัยเชียงใหม่

** ผู้เขียนหลัก นักศึกษาหลักสูตรพยาบาลศาสตรมหาบัณฑิต (หลักสูตรนานาชาติ) คณะพยาบาลศาสตร์ มหาวิทยาลัยเชียงใหม่ e-mail: tamcoi.nguyen@gmail.com

**ผู้ช่วยศาสตราจารย์ คณะพยาบาลศาสตร์ มหาวิทยาลัยเชียงใหม่

วันที่รับบทความ 6 ตุลาคม 2564 วันที่แก้ไขบทความ 16 พฤศจิกายน 2564 วันที่ตอบรับบทความ 2 ธันวาคม 2564

Background and significance

Breast cancer is a malignant tumor that has developed from cells in the breast (American Cancer Society, 2019). Breast cancer is the most commonly diagnosed cancer and the leading cause of death among females. The number of cases has increased over the decades in most countries. Worldwide, there were an estimated 2. 1 million new female breast cancer cases diagnosed out of 8.6 million new cases of cancer among women (Bray et al., 2018). The number of women who died of breast cancer in 2018 was 630,000, accounting for 15% of all female cancer-related deaths (Bray et al., 2018). Among Vietnamese women, breast cancer has had the highest number of new cases for nearly 20 years, as compared to other types of cancer (Sung et al., 2021). The numbers of women newly diagnosed and dying of breast cancer are increasing. In 2012, there were about 11,067 new cases and this increased to 15,229 new cases breast cancer diagnosed in 2018. In addition, the number deaths from breast cancer increased from about 4,671 cases to 6,103 cases in 2018 (Bray et al., 2018; Ferlay et al., 2015).

The treatment for breast cancer in stages II and III was mainly the combination of surgery and chemotherapy (National Comprehensive Cancer Network, 2019): surgery to remove cancer cells by breast-conserving surgery or mastectomy with or without lymph nodes staging and chemotherapy for patients with a combination of two of three main drugs including Doxorubicin, Cyclophosphamide and paclitaxel and a few other drugs that are alternately administered at intervals of 14 or 21 days per infusion (National Comprehensive Cancer Network, 2019). Chemotherapy can help destroy the remaining cancer cells that were missed during surgery. The combination of surgery and chemotherapy has high effectiveness which helps destroy cancer cells and prolong a patient's life (American Cancer Society, 2019; National Comprehensive Cancer Network, 2019). Thus, this therapy has been commonly applied in the world and in Vietnam. However, adverse effects of these treatments commonly occur and have major impacts on quality of life (Farthmann et al., 2016; Lôbo, Fernandes, Almeida, Carvalho, & Sawada, 2014; Kamiński et al., 2015).

Quality of life is defined as the appraisal and satisfaction of women with breast cancer receiving operations and chemotherapy with their current level of functioning compared to what they perceive to be possible or ideal (Cella, 1992). It composes four subscales including physical well-being, functional well-being, emotional well-being and social/family well-being. The deterioration of quality of life in breast cancer patients receiving operation and chemotherapy was seen in all dimensions. In terms of physical well-being, patients had pain after surgery and nausea/vomiting because of the side effects of chemotherapy (Lôbo et al., 2014). For functional well-being, patients may have difficulty when raising hands or with shoulder movement because of lymphedema, or arm and shoulder stiffness after surgery (American Cancer Society, 2019; Farthmann et al., 2016). In addition, gastrointestinal dysfunction with appetite loss, nausea and vomiting, diarrhea, constipation and mouth sores, was also frequently studied (American Cancer Society, 2019; Farthmann, 2016; Kamiński et al., 2015; National Comprehensive Cancer Network, 2019). Sexual function in patients with breast cancer was impaired after surgery (Farthmann et al., 2016). The complication of insomnia is one of the most common side effects (American Cancer Society, 2019).

In terms of emotional well- being, depression and anxiety were common among breast cancer patients who had surgery and chemotherapy (Kamińska et al., 2015; Lôbo et al., 2014; National Comprehensive Cancer Network, 2019; Zanuso, Freggoni, & Gervaso, 2020). Patients who are worried about their condition may be more focused on the possibility of death (Trieu, Mello-Thoms, & Brennan, 2015). Finally, for social well-being, breast cancer patients who suffered from physical and functional disorders frequently felt isolated from other people. They did not participate in social activities and had limited communication with other people (Kamińska et al., 2015).

Surgery and chemotherapy create a lot of changes that require adjustments for patients. One of the effective ways that patients can cope and overcome these changes is through mental adjustment. Mental adjustment reflects the way patients cope and adapt to changes due to cancer as well as the impact of treatments (Watson et al., 1988). Mental adjustment refers to the cognitive and behavioral response of breast cancer patients after having received an operation and chemotherapy (Watson et al., 1988). It is composed of 5 types including fighting spirit (FS), helplessness/hopelessness (HH/HH), cognitive avoidance (CA), anxious preoccupation (AP) and fatalism (F) (Watson et al., 1988). Fighting spirit is characterized by the positive ways that patients adapt to the disease, fully accept the diagnosis and find ways to fight the disease. Helplessness/ hopelessness is characterized by pessimistic attitudes, and feelings of giving up in patients who are diagnosed with disease. Cognitive avoidance refers to the condition in which patients avoid thinking about the illness and deny or minimize its seriousness. Anxious preoccupation is characterized by the persistent anxiety of patients when reacting to the diagnosis of cancer. Fatalism is characterized by the acknowledgement of patients with the diagnosis of disease. Diagnosis of cancer is seen as a minor threat; patients assume an attitude of resignation and passive acceptance without confrontative strategies.

The relationship between mental adjustment and quality of life has been investigated in some Western countries. Fighting spirit and fatalism had positive correlations with quality of life (Kugbey, Meyer-Weitz, & Oppong Asante, 2019; Patoo, Allahyari, Moradi, Payandeh, & Hassani, 2017; Pereira & Santos, 2016). Cognitive avoidance, anxious preoccupation and HH/HH had negative correlations with quality of life (Kugbey et al., 2019; Patoo et al., 2017; Pereira & Santos, 2016). However, the relationship between the effect of cognitive avoidance and fighting spirit is still unknown. FS did not correlated with quality of life (Cotton, Levine, Fitzpatrick, Dold, & Targ, 1999). Neither did cognitive avoidance correlate with quality of life (Lauriola & Tomai, 2019). Moreover, there have been no studies that looked at this relationship in breast cancer patients receiving operations and chemotherapy.

The results in Western countries are difficult to generalize within a Vietnamese context because of the different cultures and beliefs. Being diagnosed with breast cancer is extremely serious for Vietnamese women. While some patients believe cancer is a punishment for the bad things that they have done, which makes them passively accept and adjust to their illness and the side effects of treatment, others thought that they lived very well, so they could not accept or believe they had to experience something as traumatic as breast cancer. In some cases, the patient's relatives provide care in

improper ways by hiding the patient's disease. As a result, patients do not have a positive attitude and cannot actively fight the disease.

In Vietnam, as well as at the Hanoi Oncology Hospital, no studies have been conducted to assess mental adjustment and quality of life in cancer patients. The results of this study are expected to provide a clearer result of the patient's quality of life and the types of mental adjustment that patients used, as well as the relationship between mental adjustment and quality of life among breast cancer patients undergoing operations and chemotherapy. Through the relationship, types of mental adjustment should be encouraged to improve the quality of life for breast cancer patients during the treatment phase.

Objectives

1. To identify the types of mental adjustment among breast cancer patients receiving an operation and chemotherapy.

2. To determine the quality of life among breast cancer patients receiving an operation and chemotherapy.

3. To examine the relationship between each type of mental adjustment and quality of life among breast cancer patients receiving an operation and chemotherapy.

Conceptual Framework

Breast cancer has increased in incidence and prevalence worldwide as well as in Vietnam. The standard treatments are operations and chemotherapy. Besides their effectiveness in disease control, adverse effects can be anticipated. Quality of life is impacted directly. Quality of life is defined as the appraisal and satisfaction of patients with breast cancer who received an operation and chemotherapy with their current level of functioning compared to what they perceive to be possible or ideal including physical well-being, functional well-being, emotional well-being and social/family well-being. To maintain quality of life, mental adjustment is needed. Mental adjustment refers to the cognitive and behavioral responses of breast cancer patients who have received an operation and chemotherapy. Elements of mental adjustment include fighting spirit, cognitive avoidance, helplessness/hopelessness, anxious preoccupation and fatalism.

Methodology

A descriptive correlational research design was used.

Population and sample

The sample size of this study was calculated based on the formula of Yamane (1973). Using purposive sampling, 150 breast cancer patients receiving an operation and chemotherapy were selected.

Research Instruments

1. A demographic data record form which was developed by the researchers based on the literature review and included age, educational status, marital status, occupation, income, stage of disease, type of surgery and type and cycle of chemotherapy.

2. The Breast cancer version 4 (FACT-B questionnaire) was developed by Brady et al. (1997). The FACT-B consists of the FACT-General (FACT-G) plus the Breast Cancer Subscale (BCS), which complements the general scale with items specific to QOL in breast cancer. This questionnaire has 37 items with 4 subscales of FACT-G including functional well-being (7 items), physical well-being (7 items), emotional well-being (6 items), family/social well-being (7 items) and the breast cancer subscale (10 items). The questionnaire uses a five-point Likert - type

response format and the scores range from 0 to 148. A lower score means a lower QOL, while higher score indicates a higher QOL. The English version was translated to Vietnamese language and validated by Eremenco, Cella, & Arnold (2005) following back-translation. The Vietnamese version of the FACT-B version 4 questionnaire was used without any modification. The reliability of the questionnaire was tested with the value of Cronbach's alpha coefficient for the FACT-B version 4 at .869. The Cronbach's alpha coefficient of emotional well-being, physical well-being, social/family well-being, functional well-being, and the breast cancer subscale were .88, .86, .87, .86, .86, and .86 respectively.

3. The Mini-Mental Adjustment to Cancer questionnaire was developed by Watson et al. (1994). This questionnaire has 29 items in 5 domains (helplessness-hopelessness - 8 items, anxious preoccupation - 8 items, cognitive avoidance - 4 items, fighting spirit - 4 items, fatalism - 5 items) to identify types of mental adjustment. The questionnaire uses a four - point Likert – type scale ranging from 1 (definitely does not apply) to 4 (definitely applies). A total score for each type of mental adjustment to cancer was obtained by summing the response values across the relevant items. The mean score for each type ranged from 1-4. The higher the score, the stronger the behavior typical for a given strategy of mental adjustment to cancer. Validation of Mini-MAC has been well documented by Watson et al. (1994) with factor analysis. The English version was translated by researchers to Vietnamese using back-translation. After that, the Vietnamese version could be used without modification. The Cronbach's alpha coefficient of the Mini - MAC questionnaire was .822 and the values of the Cronbach's alpha coefficient for helplessness/hopelessness, fighting spirit, anxious preoccupation, cognitive avoidance and fatalism were .80, .86, .82, .80, and .82 respectively. The value of Cronbach's alpha coefficient was accepted.

Ethical Considerations

The study was approved by the Faculty of Nursing Research Ethics Committee (protocol no: 2020-EXP029) at Chiang Mai University and the Hanoi Oncology Hospital Ethics Committee (protocol no: 846). Participants were given an explanation of the study which also contained their rights. They were told that their participation was voluntary and they had the right to withdraw from the study at any time. The anonymity and confidentiality of participants' information were protected at all the times during this study. The use of patients' information only includes an initial from their name.

Data Collection

After approval by the relevant ethical committees, the researchers obtained permission for data collection from the hospital. In a relatively private and quiet environment, researchers explained the purpose of the study and obtained consent. The researcher read each item to the participants without explanation and marked their response on the questionnaire before they received chemotherapy. All participants were voluntary. They could refuse to participate or interrupt the researchers during data collection at any time. The researcher checked the completeness of the questionnaire and thanked the participant.

Data Analysis

Descriptive correlational statistics were used to analyze the data. Demographic data, quality of life and mental adjustment were analyzed using descriptive statistics including frequency distribution, range, mean, standard deviation and percentage. The relationship

between quality of life and mental adjustment was analyzed. The data were tested for the assumption of normal distribution using the Kolmogorov – Smirnov. The QOL data did not have a normal distribution, Spearman's rank-order correlation coefficient was used to test the correlation between mental adjustment and quality of life.

Results

1. Demographic characteristics

The participants in this study consisted of 150 breast cancer patients. They ranged in age from 30-77 years, with a mean age of 51.54, (SD = 9.81). A majority of participants were 51-60 years old (38%) or 41-50 years old (34%). Most of them were married (76.67%). The educational level of most participants was mostly at the secondary school (39.33%) or high school (32.67%) level. Most participants were farmers (44.67%) or freelance laborers (35.33%). The incomes of 58.67% of the participants were between 130$ - 220$ per month. The majority (60.67%) had stage 2 breast cancer. Most of the participants had surgery with mastectomy with axillary staging (77.33%). The largest proportion of participants were receiving their 6th cycle of chemotherapy (34%), followed by 2nd cycle (22.67%) and 3rd cycle (19.33%).

2. Types of mental adjustment

Five types of mental adjustment to cancer were used by the participants. The method most used was helplessness/hopelessness (mean score = 2.65), followed by anxious preoccupation and fatalism (mean score = 2.64). Cognitive avoidance and fighting spirit were used less often than others with mean scores of 2.45 and 2.31, respectively.

3. Quality of life among subjects

Quality of life in breast cancer patients was affected during the treatment period because the score of FACT-B among subjects was 72.78 out of a total of 148. The mean FACT-B score was 72.78 out of a total possible score of 148. Lower scores were seen in all four domains of quality of life including physical well-being (mean = 11.31, SD = 5.26), social well-being (mean = 16.71, SD = 5.21), emotional well-being (mean = 10.69, SD = 3.79), functional well-being (mean = 15.65, SD = 5.45) and the breast cancer scale (mean = 18.38, SD = 5.46).

4. Relationship between mental adjustment and quality of life

Both fighting spirit and fatalism had a positive correlation with quality of life ($p < 0.05$). The correlation was at a high level with FS ($r_s = .67$) and at a medium level with fatalism ($r_s = 0.62$). Helplessness/hopelessness and anxious preoccupation had a negative correlation with quality of life at a high level (-.71; -.69, $p < .05$). Cognitive avoidance had no correlation with quality of life ($p > .05$).

Table 1 Correlation Matrix of the Study Variables

	Physical Well-being	Social/Family Well-being	Emotional Well-being	Functional Well-being	Breast Cancer Subscale	FACT-B
Fighting spirit	.594**	.592**	.584**	.685**	.580**	.678**
Helplessness/Hopelessness	-.689**	-.645**	-.656**	-.712**	-.684**	-.712**
Cognitive avoidance	-.003	.026	.048	.171*	.096	.069
Anxious preoccupation	-.666**	-.582**	-.625**	-.686**	-.642**	-.686**
Fatalism	.551**	.512**	.610**	.624**	.592**	.620**

Discussion

Types of mental adjustment

Five types of mental adjustment were used by the participants. The results of this study are similar to many previous studies (Kugbey et al., 2019; Lauriola & Tomai, 2019; Patoo et al., 2017). However, the prevalence of each type of mental adjustment may vary among studies. In this study, patients tended to use maladaptive adjustment with a higher mean score for "helplessness/ hopelessness" (2.65); "anxious preoccupation" (2.64) and "fatalism" (2.64). The adaptive adjustments were less prevalent because of the lower mean scores of "fighting spirit" (2.31) and "cognitive avoidance" (2.45). In another study of breast cancer patients, cognitive avoidance and fatalism were the most adopted adjustment styles with higher scores, followed by fighting spirit, anxious preoccupation and helplessness/ hopelessness respectively (Kugbey et al., 2019).

The combined side effects of surgery, chemotherapy and the disease itself together affected the type of mental adjustment of patients (Kugbey et al., 2019). A high percentage of patients receiving their 6th cycle of chemotherapy was seen (34%), compared to others. Frequently hospitalization due to medication had a significant impact on patients' jobs and incomes. The association between the expensive cost of treatment and the patients' low-income caused considerable pressure (Andrea, 2017). In addition, the side effects of chemotherapy on the digestive system in the 5th and 6th cycles of chemotherapy made patients very tired and lacking in energy. Instead of enjoying food, patients had to consider solutions to cope with nausea and vomiting, and diarrhea and constipation, as well as build a healthy diet to enhance their health and ensure they had adequate nutrition for treatment (Zanuso et al., 2020). Almost all breast cancer patients lost their hair or had skin and nail changes (hyperpigmentation, dry skin, blisters, yellow nails, cracked nails) after the second cycle, which caused patients to lack confidence to communicate with friends and other people. All of these factors can be used to explain why patients tended to use a maladaptive adjustment like helplessness/ hopelessness or anxious preoccupation (American Cancer Society, 2019).

Fatalism is one of the three mental adjustments that were more prevalent than others. In Vietnam, almost patients think that how long they live is determined by fate and that cannot be changed. Patients thought that they could not change the truth of being diagnosed with breast cancer, so they left their health to fate (Trieu et al., 2015). Instead of finding ways to fight the disease, patients accepted it in a passive way with a pessimistic attitude.

Quality of life among breast cancer patients receiving operations and chemotherapy

In this study, the score of FACT-B among subjects was 72.78 out of a total of 148, which indicated that the QOL of breast cancer patients was affected during this phase. This study's findings are in line with previous studies (Trieu et al., 2015; Lôbo et al., 2014). Breast cancer patients experienced significantly worse physical, emotional, social/ family and functional well-being, and higher breast cancer-specific concerns as measured by the FACT-B (Kaminska et al., 2015). According to Lôbo et al. (2014), many patients experienced side effects from chemotherapy, had impaired sexual satisfaction and had a lower quality of life. QOL among breast cancer patients who underwent surgical proce-

dures and received adjuvant chemotherapy was impaired (Kaminska et al., 2015). The result of the research of Trieu (2015) also indicated that QOL in breast cancer patients who had a mastectomy with chemotherapy was lower.

The impacts on QOL among participants in this study were seen on the five subscales including physical well-being, emotional well-being, functional well-being, social well-being and the breast cancer subscale. The most significant reduction in score was seen in functional well-being (mean = 15.65 ± 5.45, range = 7 - 28). This result is similar to other research (Farthmann, 2016; Lôbo et al., 2014). One possible explanation for this is that all the patients experienced multiple effects from surgery, such as pain, discharge, numbness or limitation of arm movement and from chemotherapy, such as nausea and vomiting. Patients are very tired and unable to meet their own basic needs like eating, taking a bath or preparing meals (National Comprehensive Cancer Network, 2019). Nausea and vomiting make it difficult for them to eat and drink. Along with that, diarrhea or constipation cause tiredness and a lack of energy. Patients have difficulty performing daily activities or physical activities. All of these factors together significantly reduced the patients' physical and functional well-being (American Cancer Society, 2019). Which caused impairment in the patients' quality of life (National Comprehensive Cancer Network, 2019). After a mastectomy, the amputation of the breast negatively impacted patients' self-esteem regarding their appearance. Almost all patients experienced hair loss due to the side effects of chemotherapy beginning with the 2nd cycle of chemotherapy to the last one. In addition, patient's skin was dry and/or had blisters, which caused patients to lose confidence and have an aversion to communication, which affected their emotional and social well-being (American Cancer Society, 2019; National Comprehensive Cancer Network, 2019).

In conclusion, breast cancer and the side effects of surgery and chemotherapy combine to affect the physical, emotional, social and functional well-being and impair patient's quality of life.

Relationship between mental adjustment and quality of life among breast cancer patients receiving an operation and chemotherapy

The findings of this study showed a strong correlation between mental adjustment and quality of life. Fighting spirit and fatalism had a positive correlation with QOL. Helplessness/hopelessness had negative correlation with quality of life at a high level. Anxious preoccupation had a negative correlation with quality of life at a medium level. Cognitive avoidance had no correlation with quality of life.

Fighting spirit had a positive correlation with quality of life. This result is similar to many previous studies (Kugbey et al., 2019; Patoo et al., 2017; Pereira & Santos, 2016). Emotional and functional well-being were positively associated with fighting spirit (Kugbey et al., 2019). Fighting spirit had a significant correlation with the functional well-being, emotional well-being, and social/family well-being subscales (Patoo et al., 2017). Fighting spirit is described as a positive attitude and a rational evaluation of the disease and includes the ability to maintain hope in the face of adversity (Greer & Watson, 1987; Folkman, 1982). This result implies that when patients accepted a diagnosis, had an optimistic attitude and were determined to fight the illness, they could have a better quality of life. However,

one study found that fighting spirit had no correlation with quality of life (Cotton et al., 1999). Breast cancer patients in general, as well as those who have had surgery and are undergoing chemotherapy, can be affected in various ways, with different effects on their quality of life.

Fatalism had positive correlation at a medium level with all five subscales of quality of life. These findings indicated that when patients acknowledge the diagnosis, see it as a minor threat and have passive acceptance, they can improve their quality of life. These results are supported by many previous studies (Kugbey et al., 2019; Patoo et al., 2017; Pereira & Santos, 2016). Vietnamese differences in beliefs can be used to explain the positive correlation between fatalism and quality of life. Patients often believe that their life will be determined by fate. Patients passively accept their disease and are willing to deal with the side effects of treatment, which will reduce their anxiety during treatment (Trieu et al., 2015). In addition, patients who are satisfied with their lives before are willing to face realities in the future. Patients adjust to the changes that come as a result of the side effects from treatment, perform their regular activities as well as they can and maintain their relationships as normal, which enhances their functional and social well-being. According to Pereira and Santos (2016), fatalism proved to be the most adaptive trait and was most predictive of a better quality of life. Other studies on breast cancer patients undergoing treatment found that fatalism had a significant positive relationship with all of the whole subscales of quality of life (Kugbey et al., 2019; Patoo et al., 2017).

This study found a significant negative correlation between helplessness/ hopelessness and quality of life. This is similar to results from other studies (Cotton et al., 1999; Kugbey et al., 2019; Patoo et al., 2017). The QOL among subjects was negatively affected when patients had feelings of giving up and were completely engulfed by the diagnosis and feeling pessimistic. The feeling of giving up causes many difficulties in adjusting to the treatment phase. Continually thinking about the diagnosis and feeling pessimistic leads to negative attitudes in patients. They feel overloaded with side effects which can affect their physical well-being. The low score of physical well-being combined with pessimistic feelings further impairs their functional well-being. Patients can hardly maintain their relationships and cannot receive emotional support.

Anxious preoccupation was found to a have negative relationship at a high level in three subscales of QOL including physical well-being, functional well-being and emotional well-being. This result supported the notion that quality of life in patients can be affected by the patients' reactions to the diagnosis and is marked by persistent anxiety. They are incapable of finding effective solutions to deal with the side effects of treatments, which could affect their physical and functional well-being. These results are in line with the results of several previous studies (Patoo et al., 2017; Kugbey et al., 2019; Lauriola & Tomai, 2019).

In this research, cognitive avoidance had no correlation with quality of life. Although the patients avoided thinking about having an illness, avoiding or minimizing the severity of the illness did not affect their quality of life. This result is similar to other studies (Lauriola & Tomai, 2019). However, cognitive avoidance was found to have a significant positive association with functional and emotional well-being in breast cancer

patients in the treatment phase (Kugbey et al., 2019).

Application of Research Findings

Based on the research findings, interventions that enhance fighting spirit and fatalism adjustments need to be developed and applied to improve QOL in breast cancer patients undergoing surgery and chemotherapy at Hanoi Oncology Hospital, the Socialist Republic of Vietnam.

Suggestions for Further Research

According to the findings of this study, it is necessary to study mental adjustment and quality of life among breast cancer patients after an operation and receiving chemotherapy in different settings in Vietnam. Fighting spirit and fatalism are positively correlated with QOL. Intervention studies that help improve quality of life should be conducted for those with breast cancer undergoing operations and chemotherapy with the enhancement of fighting spirit and fatalism.

References

American Cancer Society. (2019). *Breast cancer facts & figures 2019-2020*. Retrieved from https://www.cancer.org/content/dam/cancer-org/research/cancer-facts-and-statistics/breast-cancer-facts-and-figures/breast-cancer-facts-and-figures-2019-2020

Andrea K. M. (2017). *Cost of breast cancer burdensome for many patients.* Retrieved from https://www.baltimoresun.com/health/bs-hs-breast-cancer-cost-20171024-story.html

Brady, M. J., Cella, D. F., Mo, F., Bonomi, A. E., Tulsky, D. S., Lloyd, S. R., Shiomoto, G. (1997). Reliability and validity of the functional assessment of cancer therapy-breast quality-of-life instrument. *Journal of Clinical Oncology: Official Journal of the American Society of Clinical Oncology*, *15*(3), 974-986.

Bray, F., Ferlay, J., Soerjomataram, I., Siegel, R. L., Torre, L. A., Jemal, A. (2018), Global cancer statistics 2018: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA: A Cancer Journal for Clinicians, 68*(6), 394-424.

Cella, D. F. (1992). Quality of life: The concept. *Journal of Palliative Care*, *8*(3), 8-13.

Cotton, S. P., Levine, E. G., Fitzpatrick, C. M., Dold, K. H., & Targ, E. (1999). Exploring the relationships among spiritual well-being, quality of life, and psychological adjustment in women with breast cancer. *Psycho-Oncology*, *8*(5), 429-438.

Eremenco, S., Cella, D., & Arnold, B. J. (2005). A comprehensive method for the translation and cross-cultural validation of health status questionnaires, *Evaluation & the Health Professions, 28*(2), 212-232. doi: 10.1177/0163278705275342

Farthmann, J., Hanjalic-Beck, A., Veit, J., Rautenberg, B., Stickeler, E., Erbes, T., Hasenburg, A. (2016). The impact of chemotherapy for breast cancer on sexual function and health-related quality of life. *Support Care Cancer*, *24*(6), 2603-2609.

Ferlay, J., Soerjomataram, I., Dikshit, R., Eser, S., Mathers, C., Rebelo, M., ... Bray, F. (2015). Cancer incidence and mortality worldwide: Sources, methods and major patterns in GLOBOCAN 2012. *International Journal of Cancer,136*(5), E359-86. doi: 10.1002/ijc.29210

Folkman, S. (1982). An approach to the measurement of coping. *Journal of Occupational Behavior*, *3*, 95-107.

Greer, S., & Watson, M. (1987). Mental adjustment to cancer: Its measurement and prognostic importance. *Cancer Surveys, 6*(3), 439-453.

Kamiński, M., Ciszewski, T., Kukiełka-Budny, B., Kubiatowski, T., Baczewska, B., Makara-Studziński, M., & Bojar, I. (2015). Life quality of women with breast cancer after mastectomy or breast conserving therapy treated with adjuvant chemotherapy. *Annals of Agricultural and Environmental Medicine*, *22*(4), 724-730.

Kugbey, N., Meyer-Weitz, A., & Oppong Asante, K. (2019). Mental adjustment to cancer and quality of life among women living with breast cancer in Ghana. *International Journal of Psychiatry in Medicine*, *54*(3), 217-230.

Lauriola, M., & Tomai, M. (2019). Biopsychosocial correlates of adjustment to cancer during chemotherapy: The key role of health-related quality of life. *The Scientific World Journal*. 1-12. doi.org/10.1155/2019/9750940

Lôbo, S. A., Fernandes, A. F. C., Almeida, P. C. D., Carvalho, C. M. D. L., & Sawada, N. O. (2014). Qualidade de vida em mulheres com neoplasias de mama em quimioterapia. *Acta Paulista de Enfermagem*, *27*, 554-559.

National Comprehensive Cancer Network. (2019). *NCCN guidelines for treatment of breast cancer*. Retrieved from https://www.nccn.org/professionals/physician_gls/ default.aspx

Patoo, M., Allahyari, A., Moradi, A.-R., Payandeh, M., & Hassani, L. (2017). Studying the relation between mental adjustment to cancer and health-related quality of life in breast cancer patients. *International Journal of Cancer Management*, *11*(7), e8407.

Pereira, F., & Santos, C. (2016). Psychological adaptation and its impact on the quality of life and spiritual well-being: A cross-sectional study of end of life cancer patients. *Nursing and Palliative Care*, *1*. doi: 10.15761/NPC1000126

Sung, H., Ferlay, J., Siegel, R. L., Laversanne, M., Soerjomataram, I., Jemal, A., & Bray, F. (2021). Global cancer statistics 2020: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA: A Cancer Journal for Clinicians, 71*(3), 209–249.

Trieu, P. D., Mello-Thoms, C., & Brennan, P. C. (2015). Female breast cancer in Vietnam: A comparison across Asian specific regions. *Cancer Biology Medicine*, *12*(3), 238-245.

Watson, M., Greer, S., Young, J., Inayat, Q., Burgess, C., & Robertson, B. (1988). Development of a questionnaire measure of adjustment to cancer: The MAC scale. *Psychological Medicine*, *18*(1), 203-209.

Watson, M., Law, M. G., Santos, M. D., Greer, S., Baruch, J., & Bliss, J. (1994). The Mini-MAC. *Journal of Psychosocial Oncology*, *12*(3), 33-46.

Yamane, T. (1973) Statistics: An introductory analysis (3rd ed). New York: Harper and Row.

Zanuso, V., Fregoni, V., & Gervaso, L. (2020). Side effects of adjuvant chemotherapy and their impact on outcome in elderly breast cancer patients: A cohort study. *Future Science OA*, *6*(9), FSO617. doi: 10.2144/fsoa-2020-0076