



**Effects of Islamic Caring Mindfulness-Based Program on Spiritual Well-Being  
and Fatigue in Indonesian Women with Advanced Breast Cancer Undergoing  
Chemotherapy: A Randomized Controlled Trial**

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**A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of**

**Doctor of Philosophy in Nursing (International Program)**

**Prince of Songkla University**

**2019**

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**Academic Year** 2018

### ABSTRACT

Research on advanced breast cancer patients undergoing chemotherapy shows that the patients suffer the threat of death and uncertainty. The disease and treatment cause fatigue, and negativity in terms of spiritual well-being. This study tested the effect of an Islamic Caring Mindfulness-based Program (ICMB) on spiritual well-being and fatigue of these women. The sample consisted of 112 women with stage III breast cancer who were undergoing chemotherapy at the Chemotherapy Unit of a teaching hospital in Indonesia. The subjects were randomly assigned to either the intervention group ( $n = 53$ ) receiving both the ICMB and routine care, or the control group ( $n = 59$ ) receiving only routine care. The intervention consisted of Islamic caring, Islamic prayer, and breath *dzikir* meditation to enhance spiritual well-being, and reduce fatigue. The instrument were 1) the Functional Assessment of Chronic Illness Therapy-Spiritual Well-Being (FACIT-Sp), and, 2) the Functional Assessment of Chronic Illness Therapy-Fatigue (FACIT-F). Data were collected four times: at the start of chemotherapy as a baseline (T1), on days 3-4 (T2), on days 23-24 (T3), and

days 44-45 (T4). Statistical analysis included descriptive statistics, chi-square test, independent t-test, one way ANOVA, and repeated measures ANOVA.

The findings revealed that the spiritual well-being of all participants was significantly higher than that before receiving the program on days 3-4 ( $p = .001$ ), and gradually increase until the days 44-45. In addition, there was different between two groups in term of change in spiritual well-being over time ( $p = .001$ ). Moreover, the fatigue of participants on days 23-24 were significantly improved compared to before receiving the program ( $p < .001$ ). Also, the participants in the intervention group had a significantly lower level of fatigue than did the control group on days 23-24 ( $p < .05$ ) and days 44-45 ( $p < .001$ ). Therefore, the program can be used in providing nursing services to patients with advanced breast cancer undergoing chemotherapy in terms of improving spiritual well-being and reducing fatigue

**Keywords:** Islamic caring, Islamic prayer, *dzikr* meditation, spiritual well-being, fatigue, advanced breast cancer

## ACKNOWLEDGEMENTS

Thanks to almighty Allah for everything and His messenger Muhammad, peace be upon him, to allow me to complete this thesis.

I would like to express my sincere appreciation and gratefulness to my major advisor, Assoc. Prof. Dr. Urai Hatthakit for her assistance, guidance, support me and valuable recommendations throughout this study. I also would like to express my gratitude to my co-advisor, Assoc. Prof. Dr. Nongnut Boonyoung for her constructive suggestions, generous, and kind cooperation.

I would like to express my gratitude to Graduate School, Prince of Songkhla University to provide full support of scholarship from Thailand's Education Hub for ASEAN Countries (TEH-AC). I also would like to thank to the University of Padjadjaran that has provided partial support for finishing my study.

I would like to thank to everyone who has contributed to my study, including all the breast cancer patients and their families, the nurses at Hasan Sadikin Hospital for their assistance during data collection process. I also would like to thank all the experts involved in the instrument validation of this study.

Finally, this thesis is dedicated to my parents and my families, who have always supported me with their love and prayers during my study. I also would like to thank to my friends who provided support and encouragement to accomplish my study.

Maria Komariah

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## CHAPTER 1

### INTRODUCTION

#### **Background and Significance of the Problem**

The leading cause of cancer and death among females worldwide nowadays is breast cancer (American Cancer Society [ACS], 2016). The incidence of breast cancer has been increasing rapidly in developing countries (World Health Organization [WHO], 2015) with no exception in Indonesia. In Indonesia, it is estimated that 200,000 new cases of cancer are diagnosed every year, and 23,140 of these cases are breast cancer. If breast cancer is found in the early stages, patients have a higher life expectancy, ranging from 85-95%. But about 70-90% of breast cancer patients come to hospital after their cancer has ameliorated and they are in advanced stages. Cancer treatment in an advanced stage is very difficult and the result is dissatisfactory (ACS, 2016).

Advanced Breast Cancer (ABC) is the deadliest cancer among women in developing countries (Aranda et al., 2006). The study reported that 60%-70% of breast cancer patients who come in for treatment are already in an advanced stage (Oemiati, Rahajeng, & Kristanto, 2011; Sander, 2012; Rahmatya, Khambri, & Mulyani, 2015). An advanced stage or metastatic breast cancer generally is a fatal condition. Regionally, the survival rate for women with cancer is 77% in five years, while for women with distant metastases the survival rate is 22% (ACS, 2016). The incidence of advanced breast cancer in Indonesia continues to increase, especially in urban areas, such as in the West Java Province (Oemiati et al., 2011).

A patient with an advanced stage of breast cancer suffers from the threat of death, uncertainty, and various symptoms due to the disease and its treatment (fatigue, pain, weakness, dry mouth, constipation, weight loss, anorexia, decreased energy, dyspnea, forgetfulness, taste change and depression) (Esper & Heidrich, 2005; Cheung, Neville, Cameron, Cook, & Earle, 2009; Porter, 2008; Walsh & Rybicki, 2006). All these symptoms have been reported to impact on a cancer patient's functional status and quality of life (Dodd, Cho, Cooper, & Miaskowski, 2010; Get-Kong et al., 2010). Furthermore, due to being terminally ill, suffering can result in a number of issues, such as psychological and spiritual distress (Loh, 2004; Villagomez, 2005). Patients with spiritual distress have stated that they see the meaning of their life, their illness, death and suffering as a punishment. Such patients could be unstable emotionally, sad, withdrawn, apathetic, and in denial (Loh, 2004). Having an advanced Breast Cancer diagnosis, or other life-threatening conditions, could change a person's perception about life (Manning-Walsh, 2005), and put such a person at risk for altered spiritual well-being because of changes in the person's wellness, symptoms of their disease and treatment.

Moreover, many studies have reported that the impact of advanced breast cancer patients experiencing Cancer-Related-Fatigue (CRF) is extensive. Most cancer patients are living with CRF due to their cancer diagnosis and treatment. Many advanced patients with breast cancer may have physical and psychological comorbidities that can increase fatigue and make management complicated (Bower, 2008).

Fatigue symptoms are also the most common side effect of patients who are admitted to the chemotherapy unit in Indonesian hospitals (Nurhasanah, 2014). According to the National Comprehensive Cancer Network (2009), fatigue



experienced by cancer patients is a state of persisting weakness, where the sensations felt are very personal, as well as the type of fatigue that is not relieved by rest. Fatigue can affect patients in an immensely negative way. It impacts on the spiritual well-being due to feelings of uncertainty, helplessness and fears about death. Thus, it results in patients experiencing set-backs in a chemotherapy treatment schedule (Borneman, Irish, Sidhu, Koczywas, & Cristea, 2014; Liu et al., 2009). Until now, fatigue has been under recognized and undertreated because the attention has been only focused on other common symptoms, such as nausea and pain (Karthikeyan, Jummani, Prabhu, Manoor, & Supe, 2012; Ryan et al., 2007). However, in saying this, several programs have been developed to address fatigue.

Furthermore, from the literature there is some information documenting the effect of mindfulness on spiritual well-being and fatigue for women with breast cancer. Currently, much empirical evidence claims that a mindfulness program can improve spiritual well-being in patients with breast cancer (Cramer, Lauche, Paul, & Dobos, 2012; Fish, Ettridge, Sharpling, Hancock, & Knott, 2014; Garland, Carlson, Cook, Lansdell, & Speca, 2007); and fatigue (Johns et al., 2015; Kim, Kim, Ahn, Seo, & Kim, 2013; Rahmani & Talepasand, 2015; Rahmani, Talepasand, & Ghanbary-Motlagh, 2014; van der Lee & Garssen, 2012; Zhang, Xu, Wang, & Wang, 2016). Most studies adopted Mindfulness-based Stress Reduction (MBSR) and cognitive behavioral therapy (CBT). MBSR is a program which was developed by Kabat-Zinn in 1979 (Kabat-Zinn, 1982) that has the intention to make people become more mindful. This program is designed with a combination of mindfulness meditation, body awareness, and yoga which consists of eight sessions (Rahmani et al., 2014). Likewise, CBT is a procedure of psychosocial, focused on the personal coping strategies' development for solving current problems and changing unhelpful

cognitive patterns (e.g., thought, beliefs, and attitudes), behaviors, and emotional regulation (Hassanzade et al., 2012). Although some studies regarding MBSR and CBT have been reported successful in improving the physical, psychological and spiritual well-being for breast cancer patients, the programs were not developed based on the culture and background of the Muslim population. Since these practices are commonly used to promote spiritual health, Muslims have been suspicious whether the practices are congruent with the Islamic culture and belief. Thus, there is a need to develop an Islam-based mindfulness program that is more culturally appropriate for Muslim people. Additionally, in Muslim culture, there are some meditative practices; Islamic prayer and breath *dzikr* meditation that Muslims practice in their daily life to attain a peaceful mind, relaxation and surrender to God. It is obligatory for every Muslim to perform Islamic prayer five times a day while meditation is recommended for practice following an Islamic prayer two times a day as an additional worship. Such religious practices can cultivate mindfulness (Aldahadha, 2013). However, the prayer and meditation practices can be considered a failure if the practitioners cannot gain a peaceful mind, relaxation and calmness, and as such, this means the practitioners are not successfully connected or they have not surrendered to God yet. Therefore, the right religious practice is very important for every Muslim.

It has been reported that some Islamic religious therapies could improve spiritual well-being as well as reduce fatigue for breast cancer patients. In these studies, Islamic concepts and practices are usually incorporated with other interventions to be used for the Muslim population. To illustrate, Fallah, Golzari, Dastani, and Akbari (2011) developed a spiritual intervention based on a counseling and psychotherapy intervention of Richards and Bergin, combined with an Islamic perspective. Jafari, Farajzadegan, Zamani, et al. (2013) used spiritual group therapy

and some aspects of the program were inspired by “Re-Creating your life: During and After Cancer” which is a program designed by Cole and Pargament (1999) incorporating an Islamic perspective. Also, Hosseini, Kashani, Akbari, Akbari, & Mehr (2016) developed a spiritual intervention based on Islamic principles (*Quran* and *Hadith*) with an emphasis on peace and the acceptance of God. Of the several Islamic intervention programs that have been developed and applied, the most common Islamic approaches being used are prayer and meditation combined with other concepts such as forgiveness, altruism, thankfulness, and patience as a means to enhance faith and connectedness to God (Fallah et al., 2011; Hosseini et al., 2016; Jafari, Farajzadegan, Zamani, et al., 2013; Jafari, Zamani, Farajzadegan, et al., 2013).

From the literature review, even though many spiritual therapies have been conducted in combination with a psychotherapy approach, there are some weaknesses in the research methodologies. These weaknesses include small sample sizes and non-randomized sampling methods; therefore, consideration is needed for generalizing these findings.

Since caring has been recognized as a foundational nursing practice that helps heal persons suffering chronic illnesses, including women with advanced breast cancer (Watson, 2008). Caring is a way of being, a body of knowledge and understanding, a moral idea (ethics), art of practice (aesthetics) and cultural social phenomena (Ray & Turkel, 2010). Therefore, in this case, the researcher employed caring practice and integrated spiritual intervention into the practice.

All things considered, based on reviews, even though there are several religious intervention programs to improve spiritual well-being and reduce fatigue, there are still gaps in the research and research methodology weaknesses. The existing programs may not appropriate for Muslim patients, especially for applying

the mindfulness practice. Hence, in order to overcome the gaps, the researcher has tried to develop a cultural specific mindfulness-based program for Muslims with advanced breast cancer. Since caring has been recognized as a foundational nursing practice that helps heal persons suffering chronic illnesses (Watson, 2008). Therefore, in this case, the researcher developed an Islamic caring mindfulness-based program, incorporating the practice of prayer and breath *dzikir* meditation to achieve a state of mindfulness, spiritual well-being and consequently leading to several expected health outcomes, including reducing chemotherapy side effects such as fatigue. Since prayer and breath *dzikir* meditation are parts of a Muslim's daily life religious practice, therefore, it is feasible and worth promoting a mindfulness-based program to enhance spiritual well-being and reduce fatigue in Muslim women with ABC. The program used a randomized control trial to represent the number of the sample size in order to strengthen the research design. As well as the outcomes measured, more than two times, the measurements were checked for reproducibility. In experimental data, repeating the same measurements in regards to multiple measurements also increases the precision and level of confidence (Peters, 2001).

### **Objectives of the Study**

To evaluate the effects of the Islamic caring mindfulness-based program on spiritual well-being and fatigue on Indonesian women with advanced breast cancer undergoing chemotherapy.

**Specific objectives.** This study covers some specific objectives, including:

1. To compare differences in spiritual well-being scores between the intervention group and the control group at baseline (Time-1), on day 3-4 (Time-2), on day 23-24 (Time-3), and day 44-45 (Time-4).
2. To compare differences in fatigue scores between the intervention group and the control group at baseline (Time-1), on day 3-4 (Time-2), on day 23-24 (Time-3), and day 44-45 (Time-4).
3. To compare changes in spiritual well-being scores and fatigue scores within the intervention group at baseline (Time-1), on day 3-4 (Time-2), on day 23-24 (Time-3), and day 44-45 (Time-4).

### **Research Questions**

1. Is there any difference in spiritual well-being scores for study participants after receiving the Islamic caring mindfulness-based program and those after receiving usual care at baseline (Time-1), on days 3-4 (Time-2), on days 23-24 (Time-3), and days 44-45 (Time-4)?
2. Is there any difference in fatigue scores for study participants after receiving the program and those after receiving usual care at baseline (Time-1), on days 3-4 (Time-2), on days 23-24 (Time-3), and days 44-45 (Time-4)?
3. Are the spiritual well-being scores for study participants after receiving the program on days 3-4 (Time-2), on days 23-24 (Time-3), and days 44-45 (Time-4) higher than those at baseline (Time-1)?

4. Are the fatigue scores for study participants after receiving the program on days 3-4 (Time-2), on days 23-24 (Time-3), and days 44-45 (Time-4) higher than those at baseline (Time-1)?

### **Research Hypotheses**

1. The mean scores of the intervention group on days 2-3 (Time-2), on days 23-24 (Time-3), and days 44-45 (Time-4) will be higher than those of the control group.

2. The mean scores of fatigue of the intervention group after receiving the program on days 2-3 (Time-2), on days 23-24 (Time-3), and day 44-45 (Time-4) will be higher than those of the control group.

3. The mean scores of spiritual well-being of the intervention group after receiving the program on days 2-3 (Time-2), on days 23-24 (Time-3), and days 44-45 (Time-4) will be higher than at baseline.

4. The mean scores of fatigue of the intervention group after receiving the program on days 2-3 (Time-2), on days 23-24 (Time-3), and days 44-45 (Time-4) will be higher than at baseline.

## Conceptual Framework

The main conceptual framework of this study focuses on Islamic principles which consist of the core of Islamic practice; prayer and meditation and Islamic caring for women with breast cancer undergoing chemotherapy.

**Islamic principles.** Islamic principles were used in this study. According to Rassool (2000), Islam's fundamental teaching is the faith in the oneness of *Allah*. The relationship between Allah and man without intermediaries is most important for Muslims (Akhtar, 2002). During their lifetime, Muslims apply their faith for Allah by praying and practicing their belief. Muslims believe in only one God, known as "*Allah*," and Muhammad as the last prophet. Muslims use the Five Pillars of Islam and the Six Beliefs of Islam as their guide to practicing their faith in daily life.

There are six elements of faith, or specific beliefs upon which the faith is founded. The six elements of faith are faith in God (*Allah*), angels, God's messengers (Prophets), holy books (Quran, Ingil, Zabur, and Torah), the predestination, and the judgement day in the afterlife (Ohm, 2003). In addition, Islam also has five major concepts of the Islamic Pillars: (1) faith to God, (2) prayer five times daily at specified times, (3) giving of alms to the poor, (4) Ramadhan fasting, and (5) pilgrimage to the holy city, Mecca (Sutherland & Morris, 1995). Then, the religiosity of Muslim will be mirrored by following these pillars and religious practice (Al-Lahem, 1996). Some of the pillars and Islamic practices that help the healing and recovery process are prayer and *dzikr* meditation. The following paragraph will address the Islamic practice including prayer and *dzikr* meditation.

**1. Islamic practice: prayer and meditation principles.** The cores of Islamic practice, according to Sufism (a mystical form of Islam), are prayer and meditation

(Appel & Kim-Appel, 2009). These kinds of Islamic spiritual practices have an important role in healing and recovery (Yücel & Nursi, 2010).

*1.1. Prayer.* Islamic prayer (*salat*) is the use of physical movements of the body in the act of worship in addition to silent recitation of the Quran, which involves supplication (meaning of the word) and faith (Salleh, Lim, & Ibrahim, 2009); Sangkan, 2006). So, that one can cultivate mindfulness, and increase their level of calmness and connection to God (Alameen, 2015; Sangkan, 2006). The connection to God can produce inner strength or spiritual energy (Henry, 2015; Sangkan, 2006), in turn alleviating fatigue (Aisyah, 2017). Moreover, prayer is considered as a slow to moderate exercise (Bai, Ye, Zhu, Zhao, Zhang, 2012; Hashim, Osman, Abas, Latif, 2010; Imamoglu, 2016), therefore, it will produce additional energy in the body, so that the body will feel fresh, in turn, this can minimize fatigue.

Mock et al. (2007) argued that improving adaptive capacity holistically is a goal that must be achieved in handling fatigue. Prayer activity could improve holistic adaptation due to the energy conservation technique after performing prayer. This results in increasing energy, the ability of activity, and coping strategies, which ultimately would support personal integrity and social interaction.

Some positions in the prayer, such as prostration, are expressed to increase the cognitive aspect (Reza, Urakami, & Mano, 2002). Thus, prayer can improve the process of thinking as well as increase adaptation to physiological and psychological stress. Ultimately, physically, mentally and spiritually resulting in well-being.

*1.2 Breath dzikr meditation.* Breath *dzikr* meditation is a method of *dzikr* with the rhythm of inhaling through the nasal cavity into the lungs and then exhaling through the nasal cavity again, using the beautiful names of God. Breath *dzikr* meditation can improve mindfulness through faith and resignation, as well as



increasing parasympathetic activity and heart rate which improve the condition of relaxation (Dusex et al., 2008; Holzel et al., 2011). Moreover, mindfulness in a practitioner can fully increase the consciousness of God, serenity, peace of mind, and calmness. As a result, the spiritual well-being of the practitioner will be enhanced and fatigue will be reduced.

**2. Islamic caring.** Islamic caring refers to nurse's actions guided by Islamic concepts and culture in order to heal the clients. According to Ismail & Hatthakit (2018), Islamic caring emphasizes on balancing the spirit, body and soul. The Islamic faith of patients and nurses is an important part in the application of Islamic caring to gain harmony in a patient's life. The care is given based on some generic caring virtues, such as love, kindness, compassion, and trust that are important to help establish trustworthy and caring relationship with the patients and their families. Islamic caring also covers several domains of care, namely, the physical, spiritual, intellectual, ethical, and ideological aspects of patients.

Firstly, the physical domain is to relieve physical suffering as a result of the disease, treatments, and the complication of the investigation and treatment of the disease. Moreover, nurses perform nursing interventions, such as managing physical problems regarding the side effects of chemotherapy treatment, and following a doctor's prescription in correctly administering a patient's medication. Secondly, the spiritual domain refers to nurses providing time to the patient for prayer, encouraging the patient to do *dzikir* (meditation), and expressing faith through being patient. Thirdly, the intellectual domain refers to a nurse's action towards the patients and their families by giving information about the disease or condition, teaching them to manage psycho-spiritual problems based on Islamic belief. Fourthly, the ethical domain refers to nursing interventions that the nurses provide the patients with

respect and fairness, moreover, the nurses respect the decisions made by patients and their families. Fifthly, the ideological domain refers to nursing interventions that the nurses provide caring for self, caring for others, and caring for God in line with the Islamic doctrine.

As a consequence, the final Islamic caring outcome is harmony, it means happiness, inner peace, inner energy, and acceptance, which is achieved through four dimensions of connectedness. These are connectedness with self, connectedness with others (family), connectedness with the environment, and connectedness with God (Ismail & Hatthakit, 2018).

*Connectedness with self*; the caring outcomes of connectedness with self are understanding the state of one's healthiness, purpose, and meaning of life as well as sincerity. The nurses' practice of Islamic caring include giving care to promote and maintain health, providing adequate information on the health status of a patient, providing knowledge of the disease, and treatment, giving attention, compassion, comfort, and reflecting/discussing to encourage self-understanding.

*Connectedness with others (family)*, the caring outcomes of the connectedness with others are feeling secure, loved, confident, and having a good family relationship. The nurse can facilitate the patient and family to have a role in making decisions and in the caring.

*Connectedness with the environment*, the caring outcomes of the connectedness with the environment are the feelings of comfort of the patients and their families, and enhancing nurse-patient satisfaction. The practice of Islamic caring creates a comfortable, clean and quiet environment, providing time and space for religious practice as well.

*Connectedness with God (spiritual connectedness)*; the caring outcomes of the connectedness with God (spiritual connectedness) are achieving inner peace, optimism, acceptance, surrender, honesty, joy, inner energy and faith in God. The nurses facilitate the patient to pray, meditate, be patient, and be sincere.

All things considered, Islamic caring contributes to enhancing spiritual well-being and fatigue. The nurses promote the patients to understand themselves, have a good connection with the nurses, family members, and others, also promote their spiritual health, by helping them to connect with God. Therefore, in this study, the program incorporated prayer and breath *dzikr* meditation in order to promote God connectedness. Connecting to God is the core value that guides the nurse to care and perform Islamic caring.

**Mindfulness.** In Islam, mindfulness can be achieved through performing prayers quietly and slowly, as well as focusing one's mind only on God (*khushu*) (Ijaz, Khalily, & Ahmad, 2017). It can be pursued through understanding the meaning contained in an utterance (contents of the prayer readings), glorification and honor (*Ta'zhim*) and creating fear of God (Aziz, 2013). A focus on God will provide the ability to control emotions (Zeidan, Grant, Brown, McHaffie, & Coghill, 2012).

In summary, the present study integrates Islamic caring with prayer and breath *dzikr* meditation for taking care of the advanced breast cancer patients undergoing chemotherapy, in order to connect to God and attain mindfulness to reach the expected health outcomes, namely, spiritual well-being and fatigue. The most common side effect of patients receiving chemotherapy is fatigue and this has an inverse relationship with spiritual well-being (Lewis, 2014).

On the whole, the outcomes, for the present study are spiritual well-being and fatigue. The Functional Assessment of Chronic Illness Therapy-Spiritual Well-Being

(FACIT-Sp) (Cella et al., 1993), and the Functional Assessment of Chronic Illness Therapy- Fatigue (FACIT-F) (Yellen, Cella, Webster, Blendoski, & Kaplan, 1997) were used to assess the outcomes. In order to ensure the expected health outcomes, performing prayer correctly (*khushu*) needs to be practiced. Whereas, the researcher also measured mindfulness or correct (*khushu*) prayer among the participants using the Assessment of Khushu Prayer Questionnaire (AKPQ) to ensure the correctness of the practice of prayer (Nawansih & Purwanto, 2012).

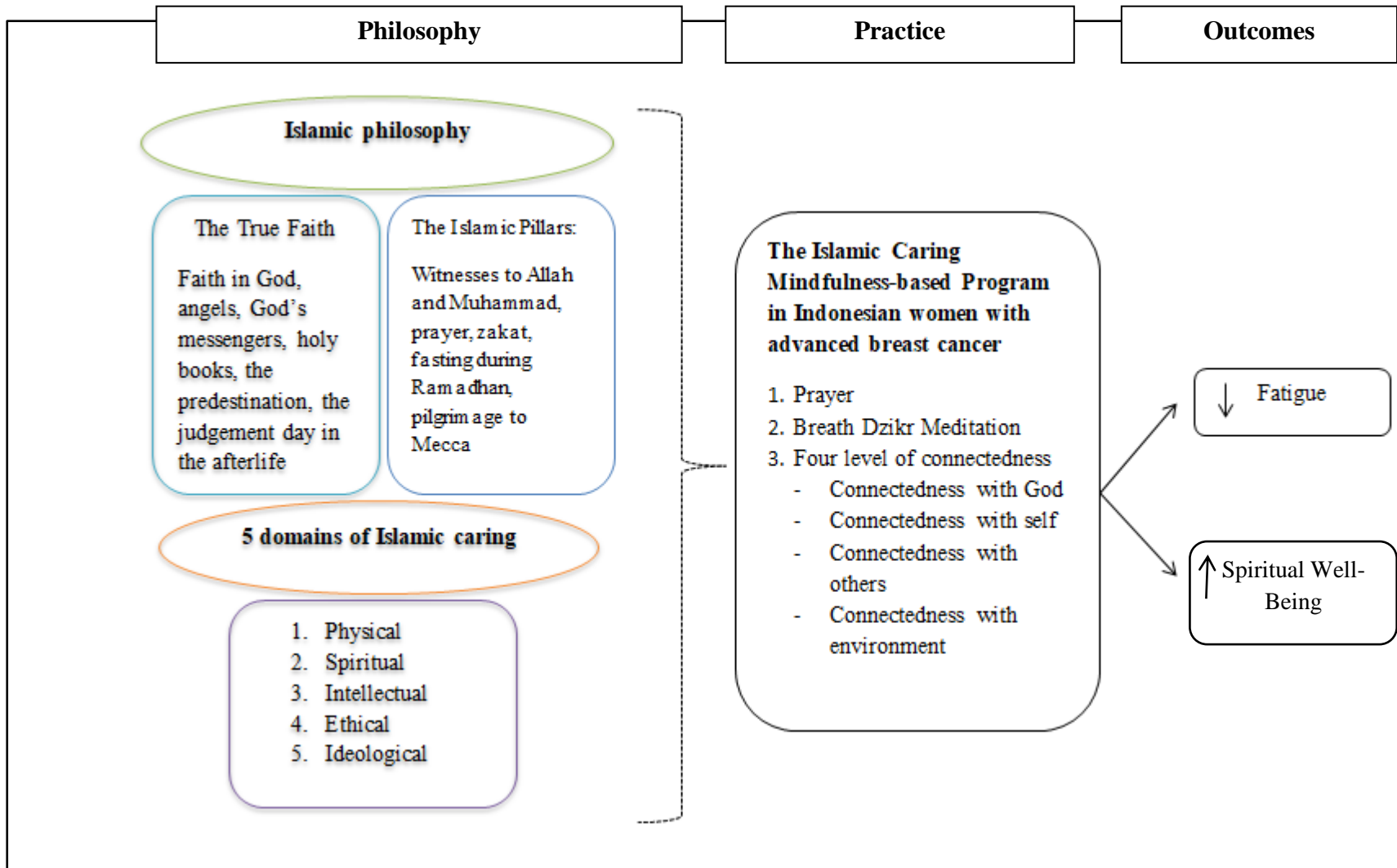


Figure 1. The diagram of the conceptual framework of the study

## Definition of Terms

**Islamic Caring Mindfulness-based Program.** This nursing intervention program refers to a program based on Islamic philosophy (the True Faith and the Five Pillars) for enhancing spiritual well-being and alleviating fatigue of Indonesian women with advanced breast cancer undergoing chemotherapy. The program follows the standard care during chemotherapy infusion's process with the adjunct of specific ICMB activities attached to the ensuing three main activities, namely, Islamic prayer, breath *dzikr* meditation, and Islamic caring. The duration of the program was six weeks.

**Spiritual well-being.** Spiritual well-being refers to an advanced breast cancer patient's feeling of harmony, peace, the meaning of life and purpose in life, and the power of faith. The Functional Assessment of Chronic Illness Therapy-Spiritual Well-Being (FACIT-Sp) was used to measure the level of spiritual well-being. The FACIT-Sp consisted of 12 items and two components, namely meaning/peace (8 items) and faith (4 items) on a scale of 0 to 4 that ranges from "not at all" (0) to "very much" (4). Higher scores indicated a higher level of spiritual well-being.

**Fatigue.** Fatigue refers to the perception of advanced breast cancer patients undergoing chemotherapy as being tired, weak, or lethargic, unable to perform normal daily activities, and having decreased work efficiency. The Functional Assessment of Cancer Intervention Therapy-Fatigue (FACIT-F) was used to measure fatigue. There is already an Indonesian language version. The FACIT-F comprises of 13 items with a Likert Scale of 5 points. Higher scores indicated a lower level of fatigue.

**Standard care.** A standard care program refers to the usual care that is administered by nurses at the chemotherapy unit of the Hasan Sadikin Hospital in Bandung. The services comprised of providing an information procedure of chemotherapy and giving information about common problems regarding side effects of chemotherapy, as well as administering chemotherapy medication, giving an infusion and other medications.

## CHAPTER 2

### LITERATURE REVIEW

The literature review describes the main concepts and its related content regarding an effective Islamic Caring Mindfulness-based Program on Spiritual Well-being and Fatigue in Women with Advanced Breast Cancer. The following outline is presented as per used in literature review conducted:

1. Overview of Breast Cancer and Its Treatment
2. Spiritual Well-being among Advanced Breast Cancer Patients
3. Measurement of Spiritual Well-being in Patients with Advanced Breast Cancer
4. Fatigue among Advanced Breast Cancer Patients
5. Measurement of Fatigue in Patients with Advanced Breast Cancer
6. Philosophy of Islam
7. Interventions to Enhance Spiritual Well-being in Patients with Advanced Breast Cancer
8. Interventions to Reduce Fatigue in Patients with Advanced Breast Cancer
9. Mindfulness Mechanisms to Enhance Spiritual Well-being and Reduce Fatigue
10. Factors Influencing Spiritual Well-being and Fatigue in Breast Cancer
11. Summary



## **Overview of Breast Cancer and Its Treatments**

**Concept of breast cancer.** Breast cancer is one of the most frequent cancers among women around the world, with more than 2 million new cases detected in 2018. About 23% of all cancer cases among women were breast cancer (Cramer, Lauche, et al., 2012). In Indonesia, breast cancer is the topmost of cancer among women (WHO, 2018) with an increasing number of patients diagnosed at a later stage (Ng et al., 2011; Rahmatya et al., 2015). According to the latest WHO data published in 2019, number of deaths from breast cancer is estimated around 22,692 or 17% of all cancer deaths among women.

Breast cancer is mostly occurs among postmenopausal women. However, currently it is also can be found among younger aged women, such as those who are less than 25 years old, and few cases among men. Breast cancer may affecting woman not only physically, but also emotionally, psychologically, socially and spiritually. These adverse effects may contributes negatively towards the women who are in productive age especially those who are known as wife and/or mother. Although breast cancer is known as a sickness occurring in developed countries, from about 50% of breast cancer cases, 58% deaths occur in developing countries (Azubuike & Okwuokei, 2013; Ng'ida et al., 2019).

**Treatment of breast cancer and adverse effects.** The principle of treatments for breast cancer is not so different from the other cancer types. There are many treatment options available in treating breast cancer. The treatment planned involves oncologists, patients and relatives in performing decision making for the best option of choice. The treatment may involve (1) surgery combined with (2)

radiation therapy, (3) systemic therapy: hormonal therapy, chemotherapy, and/or (4) targeted therapy (ACS, 2014). The oncologist would choose and recommend a certain treatment for breast cancer based on its stage, and taking into consideration the related advantages and disadvantages. In any treatment, however, the negative or side effects of treatment are unavoidable.

Commonly, patients with advanced stage of breast cancer receive chemotherapy treatment. Chemotherapy drugs are typically administered either intravenously or orally depending on the type of chemotherapy. Chemotherapy is given in cycles through which the drug(s) are absorbed into the blood and pass through the blood vessels to kill cancer cells in the different parts of the body. Normally, each treatment period is followed by a certain period of recovery, leading to treatment that lasts several months. The type of drugs administered, their amount, and length of treatment affect patients differently. The benefits of chemotherapy depends on the type and stage of breast cancer of an individual, and it may vary for each patient.

### **Spiritual Well-Being Among Advanced Breast Cancer Patients**

Concept of spiritual well-being is defined as an expression (Wilding, May, & Muir-Cochrane, 2004), a person's mental spiritual measure, which is built by two domains, namely religion and spirituality. Clay, Talley, and Young (2010) defined spiritual well-being as the ability to foster hope and take meaning from life experiences and feel the life force in dealing with self, God, family, and life elements

that help empower themselves (Como, 2007). Spiritual well-being plays an important role in health and the healing process.

According to Ellison (2006), the spiritual well-being is defined as the process of elaborating the nature of the dynamic bond between the person and the Creator, whose harmonious relationship is dependent on the deliberate self-development, usually on the basis of the appropriateness between experiencing a meaningful life, the goals and values of personal life. This self-development is also made as a personal challenge, done by meditation or contemplation leading to an inner state of happiness.

Gomez and Fisher (2003) explain spiritual well-being as a concept describing the innate state, with an element of motivation or inner drive to find the purpose of life, which is naturally dynamic and subjective. Further, it is focused on something distinctive, which then is believed to be the truth. Spiritual well-being contains a real act of dealing with the essence of existence, certain inner experience and belief. All of them provide a goal, meaning and values for a quality of life, e.g., by giving thanks to God, loving others, and learning from previous life experiences (Gomez & Fisher, 2003).

Spiritual well-being has some components, such as, feelings of harmony, peace, the meaning and purpose of life, and the power of faith (Bredle et al., 2011). Faith is an important aspect that contributes to the spiritual well-being of the person. Various studies have pointed out that faith, especially faith in God, helps the cancer patient to live well amidst the pain and suffering from cancer. There are many ways in which the persons with advanced breast cancer express their faith in God and how belief in God helps them to cope with cancer. Some of them express faith in God

through prayers asking for strength and spiritual well-being (Fallah et al., 2011; Hosseini et al., 2016; Jafari, Farajzadegan, Zamani, et al., 2013).

Regarding sense of spiritual well-being, in a Muslim country, Ahmad, Muhammad, and Abdullah (2011) used a qualitative study to explore religious practice and spirituality and coping among three Malay Muslim women with advanced breast cancer. They found that life-threatening diseases, such as breast cancer, can be a spiritual encounter and a deeply emotional experience as they cope and find the way toward healing.

Therefore, it can be concluded that spiritual well-being in this study reflects the extent to which patients live in harmony with regard to the meaning, purpose, and values of life amidst suffering from cancer. This component is important in the treatment process of cancer to increase hopeful health results.

### **Measurement of Spiritual Well-Being in Patients with Advanced Breast Cancer**

A measurement to evaluate spiritual well-being and fatigue is important to enhance the quality of breast cancer treatment in patients. The selection of the instruments should be adjusted to the desired objectives. Yarbrow, Wujick, and Gobel (2011) suggested considerations that should be examined in the selection of the instruments, such as, reliability and validity, burden on respondents, and the availability of instruments in various languages.

**Measurement of spiritual well-being.** Several instruments for measuring spiritual well-being have been developed. Three such instruments are the Functional

Chronic Illness Therapy-Spiritual Well-Being Scale (FACIT-Sp), the Spiritual Well-Being Scale (SWB), and the Spirituality Index of Well-Being.

***The Functional Assessment of Chronic Illness Therapy-Spiritual Well-Being Scale (FACIT-Sp).*** Cella et al. (1993) developed the FACIT - Sp to fulfill the need for a brief and appropriate instrument that should be able to be applied in any religious or spiritual group context. This assessment was developed based on the involvement of cancer patients, psychotherapists, and religious/spiritual experts. It contains 12 items with two subscales of spiritual well-being: (1) meaning/peace subscale consisting of eight items by assessing purpose in life, and (2) second subscale is faith. It is comprised of four items and measures the correlation between the disease and spiritual and/or religious beliefs (Brady et al., 1999; Peterman et al., 2002; Bredle et al., 2011). A-5 point Likert scale is used on this instrument and the subscale scores were then totaled. This instrument is using a 5-point Likert scale with minimal of 1 to as maximum of 5 for each items asked. The total score will be counted according to respondent respond on the instrument. The total score will be deliberated as higher the score is, indicates that a high level of spiritual well-being. In addition, this instrument had a Cronbach's alpha coefficient of .87, therefore, the psychometric properties are acceptable.

FACIT-Sp has been used in numerous studies, translated and validated into 15 different languages. The instrument is used to examine the correlation of spiritual well-being, and health and adjustment to illness (Bredle et al., 2011).

***The Spiritual Well-Being Scale (SWB).*** Paloutzian and Ellison (1982) have developed the SWB scale. This scale is proposed to evaluate the subjective perception of individuals regarding their spirituality. There are two subscales from these two

components which compose the Scale: Religious Well-being subscale (RWB), and Existential Well-being subscale (EWB) (Darvyri et al., 2014). It consisted of 20 items, and a 6-point Likert Scale with optional answers ranging from “strongly disagree” (1) to “strongly agree” (6), without a midpoint. The Cronbach’s Alpha coefficient for this scale is 0.89 which indicates that it has high reliability value.

***The Spirituality Index of Well-Being.*** Daaleman and Frey (2004) developed the Well-Being Spirituality Index (SIWB). SIWB is used to measure perceptions of spirituality. SIWB consists of 12 items. The scale is separated into two subscales. There are (1) subscale of self-efficacy, and (2) subscale of life-scheme. The score is ranging from “strongly agree” (1) to “strongly disagree” (5). Cronbach’s alpha for subscale of the self-efficacy = 0.86; subscale of the life scheme = 0.89; and total scale = 0.91, which is show a good reliability.

In summary, there are many measurement tools for spiritual well-being in chronic illnesses including for cancer patients are available. However, the researcher would like to select the FACIT-Sp scale, because this scale has two main domains, namely meaning/peace and faith. These domains reflect the outcome of the intervention (Islamic caring mindfulness-based).

### **Fatigue among Advanced Breast Cancer Patients**

**Definition of fatigue.** Fatigue is a common phenomenon experienced by individuals. It is generally experienced by both the healthy and chronically ill individuals. Fatigue is commonly associated with the symptom that the person experiences disequilibrium, between physical, psychological, and spiritual aspects of

being (Byar, Berger, Bakken, & Cetak, 2006). For those who are healthy, this disequilibrium normally requires certain rests or breaks in order to regain personal equilibrium; however, for those who have an acute illness, it indicates that he/she is in need of serious therapy or treatment (Prue, Allen, Gracey, Rankin, & Cramp, 2010; Romanelli, Bozzone, Magrone, Pascoli, & Sterzi, 2004).

Fatigue in acute illness is commonly associated with cancer disease. According to Aistars (1987), fatigue is a situation caused by prolonged stress, resulting from direct or indirect attributions to the disease process and contributing to subjective feelings of generalized weariness, weakness, exhaustion, and lack of energy. In addition, fatigue is a type of human response to the cancer experience and its treatment (Morrow, Andrews, Hickok, Roscoe, & Matteson, 2002).

According to The National Comprehensive Cancer Network (NCCN), cancer-related fatigue is “a distressing persistent, subjective sense of physical, emotional, and/or cognitive tiredness or exhaustion related to cancer or cancer treatment that is not proportional to recent activity and interferes with usual functioning” (Berger, Lockhart, & Agrawal, 2009). Holley (2000) differentiated this cancer-related fatigue from ordinary fatigue, in that it “was more rapid in onset, more intense with no relationship to physical exertion, more energy-draining for performing activities, longer lasting, and unrelieved by sleep and rest, often unexpected, and tended to increase the feelings being disconcerted and anxious”.

The definition and descriptions above indicate that cancer-related fatigue is an experience subjective to the individual cancer patient, and it is influenced by many factors, such as physical, psychological, and spiritual factors. Physically, fatigue can result from the direct effects of cancer, cancer-related symptoms, therapy effects;

psychologically, fatigue can result from the emotional distress stimulated by cancer and its effects; and spiritually, fatigue can result from the spiritual dryness due to cancer.

According to Lewis et al. (2014), fatigue is a general term used to describe the different feelings with a diversity of terminologies indicating alleviated either physical, mental, emotional, or social capacity, and it is also indicates distress. Fatigue is the most prevailing symptom among cancer patients who receive radiation therapy and cytotoxic chemotherapy.

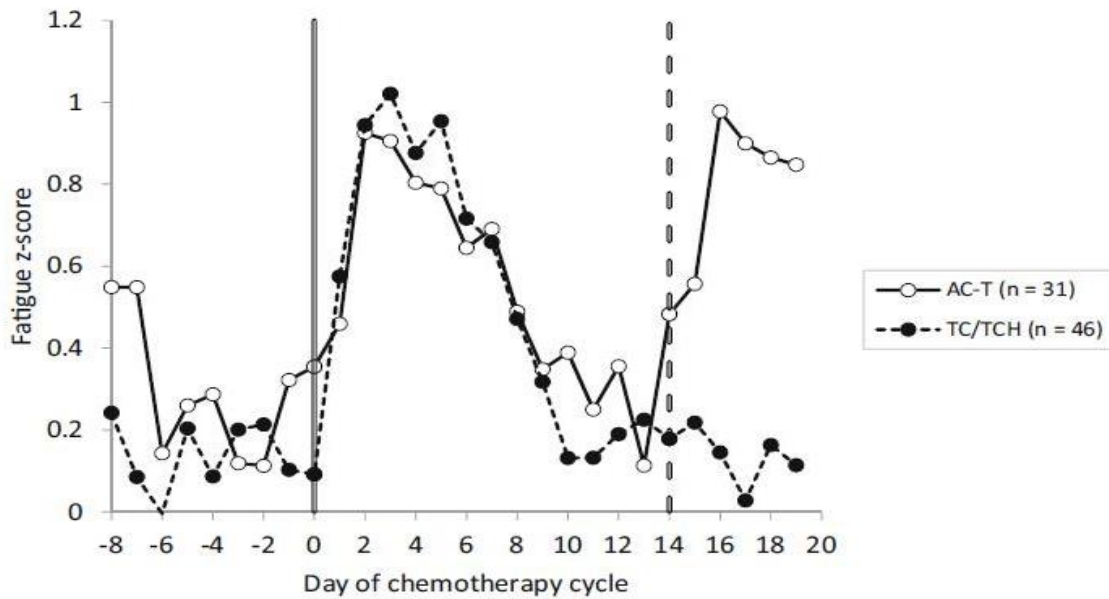
**Fatigue of breast cancer patients while receiving chemotherapy.** Several studies have shown that 80% to 90% of breast cancer patients experiencing fatigues during undergoing chemotherapy (Bardwell & Ancoli-Israel, 2008; Schmidt et al., 2012). Fatigue symptoms were consistently reported for more than 50% of various types of cancer therapy (Naraphong, Lane, Schafer, Whitmer, & Wilson, 2015).

The chemotherapy regimen can cause fatigue; for instant, breast cancer patients who received 5Fluoroacil, Doxorubicin and Cyclophosphamide chemotherapy had muscle weakness caused by stimulation cell oxidative reactions from peroxidation lipids and protein carbonyl. They are released from doxorubicin and delivered to C2C12 myotubes which will activate caspases enzymes and proteolysis and which result in muscle cell apoptosis. It causes reduced muscle mass and contraction ability as the originator of the complaint of fatigue (Gilliam & St Clair, 2011).

Fatigue has a varied intensity and duration according to the time at which fatigue is measured. Basically, time in assessing fatigue is a very important aspect to be considered. Particularly, there have been studies focusing on patterns of fatigue



during cancer adjuvant therapy (Berger, 1998; Berger, Gerber, & Mayer, 2012; Berger et al., 2009; Molassiotis & Chan, 2004). For adjuvant chemotherapy, the timing of measurements is relative to the different cycles of chemotherapy as well as the administration of chemotherapy. The study results revealed that the symptoms of cancer-related fatigue were increased during treatment. Cancer-related fatigue peaked two to five days after treatment and remained elevated the week after each cycle of chemotherapy (Schwartz, 2000). According to Battaglini et al. (2008), more than half of cancer patients experience the highest level of fatigue about three days following the treatment. Similarly, a pilot study found that those breast cancer patients receiving chemotherapy experienced significantly higher fatigue on day 3 of the first and second cycle (Sura, Murphy, & Gonzales, 2006). Additionally, chemotherapy regimens, and fatigue were found to significantly change over time. The pattern of fatigue was primarily mild, rose to moderate, and then dropped back down to mild. Fatigue levels did not return to baseline and did not differ based on regimens (Berger et al., 2009). Furthermore, Junghaenel, Cohen, Schneider, Neerukonda, and Broderick (2015) examined changes in daily fatigue who are receiving adjuvant chemotherapy with AC-T (in 2-weeks cycle) and TC or TCH (in 3-week cycle) regimes among breast cancer women. The results can be seen on the graph below:



*Figure 2.* Mean fatigue levels for TC/TCH (3-weeks cycle) and AC-T (2-weeks cycle) regimens over the course of a 28-day-study-period. Day-0 and day-14 indicates that the day of first chemotherapy infusion and the day of the second chemotherapy infusion for AC-T (two week cycle) regimens, respectively. Adapted from Junghaenel, Cohen, Schneider, Neerukonda, & Broderick, (2015).

The graph illustrated that, the patient's experience of fatigue fluctuates each day during the chemotherapy cycles. However, the maximum level of fatigue is experienced by patients at two to five days in the first week after chemotherapy treatment. For the basis of this finding, the researcher decided to measure the fatigue.

## Measurement of Fatigue in Patients with Advanced Breast Cancer

**Measurement of fatigue.** Fatigue is a subjective experience and common among patients with cancer. However, the assessment of fatigue is not routinely performed in a clinical setting. Thus, accurate assessment of fatigue is the first critical part of providing appropriate and effective management (Scruggs, 2009).

Fatigue assessment on patients is the most important thing in improving the quality of handling fatigue. Yarbro et al. (2011) explained that the high prevalence of fatigue during chemotherapy requires regular fatigue assessment from the beginning of treatment of the terminal phase, so that the selection of fatigue instruments must be determined as needed.

Several instruments for measuring fatigue levels have been developed, including the Piper Fatigue Scale (PFS), Cancer Related Fatigue Distress Scale, and The Functional Assessment of Cancer Therapy-Fatigue (FACT-F). The following paragraphs will detail each instrument

***The Piper Fatigue Scale (PFS).*** Piper (1987) developed the PFS and revised it in 1998. The PFS-R is a measurement tools for fatigue which is widely used in cancer populations. ,It is consists of 22 items with (Payne et al., 2006; Piper, 1993). four fatigue dimensions namley as behavioral/severity, affective meaning, sensory, and cognitive/mood. The instrument is assessing current fatigue experience by providing the response from zero to ten score by an individual. The content and validity of PFS were determined among adults of cancer with the Cronbach alphas values were greater than .92 for the four subscales and the standardized alpha for the whole scale was .97 (Piper et al., 1998). The PFS - R consists of four open-ended

items to gain qualitative data on the cause, duration, and relief of fatigue, as well as the other symptoms.

*Cancer Related Fatigue Distress Scale* assesses fatigue based on the consequences of fatigue on physical, social and psychospiritual distress caused by cancer related fatigue during the previous week. This instrument consists of 20 question items using 11 Likert scale ranges (Holley, 2000). This tool is clinically beneficial because of its brevity (20 items), clear directions that required no training to use. Further, it is sufficient to describe dimensional fatigue, but the evaluation of 11 ranges in the Likert scale does not facilitate respondents.

*FACIT- Fatigue (Functional Assessment of Chronic Illness Therapy - Fatigue)*. The FACIT-F consist of 13-item fatigue with a 5-point scale that is suitable for use in clinical trials. The FACIT instrument-Fatigue version SF4 has been widely used in various languages, including Indonesian, and has good value of Cronbach's alphas = 0.93 - 0.95, with  $r = 0.90$ , suggesting the ability to be used as an independent measure of fatigue briefly (Yellen et al., 1997). This instrument has been tested on cancer patients to measure patient's fatigue over a period of one week. It is convenient for respondents to fill in and the time needed to fill it in is shorter.

The researcher decided to use the FACIT-F because it could measure the feeling of fatigue and their impact on daily activities in breast cancer patients undergoing chemotherapy. Also, it provided convenience for respondents to fill in and the time needed to fill out the instruments was shorter. In addition, an Indonesian version of FACIT-F was available. Therefore, the FACIT-F was considered to fit this study.

## **Philosophy of Islam**

The word “Islam” means “submission”, “surrender to God’s will”. *Allah* is the Arabic name for God. Islam guides the believer to meet the spiritual, physical, psychological, cognitive, and social needs (Barise, 2005). In this regard Islam is not just a religion, but also a philosophy and a way of life (Barise, 2005; Rassool, 2000). Moreover, Islam is based on the True Faith and the Five Pillars. They shed light on the integration of spirituality with everyday life events.

**The True Faith of Islam.** There are six elements or specific beliefs as the foundation of Islamic faith. They consist of the belief in One God, belief in the angels; belief in all of God’s revealed scriptures consisting of *Quran*, *Zabur*, *Torah*, and *Ingil*; belief in and reverence of all God’s Prophets beginning from Adam up to Mohammad (peace be upon them); belief in the life after death; and belief in the human freedom and God’s permission on the happenings in the world (Barise, 2005: Ohm, 2003).

**The Five Pillars of Islam.** The Five Pillars of Islam are five ritual practices which regulate the lives of Muslims and unify the Muslim community. They consist of (1) the declaration of faith (*sahadah*): there is no God except *Allah* and Muhammad (PBUH) is His messenger; (2) prayers, i.e., obligatory prayers performed five times a day at designated times. Prayer is a direct communication between humans and *Allah*; it helps the person to maintain God-consciousness and discipline; (3) *zakat* (self and property purification); (4) fasting during the month of Ramadhan; and (5) pilgrimage to Makkah (*Hajj*) for those who are able (Barise, 2005; Ohm, 2003; Rassool, 2000).

The cornerstone of Islamic faith is a belief in the oneness of God. God is the ultimate source of help for human beings, though it may come through the environment. Hence, Muslim always looks for help from God, and any help coming from others is perceived as coming from God. Recent scientific research shows that having faith in God contributes a significant factor to human physical, psychological, and spiritual health (Barise, 2005; Rassool, 2000).

God created human beings and made it clear that they are just weak creatures before Him, and who are dependent on Him and will certainly die one day. In the Muslim perspective, health, sickness, misery, and dying are part of human life and tests from God. Amidst suffering, e.g., from cancer, human beings are encouraged to view and accept it and what may come as its consequence with patience, in prayer and meditation, and to look at it as a means for atonement; and even regard death as the journey towards their God (Athar, 2005; Rassool, 2000).

The Eastern belief system has utilized prayers and meditation to advance tranquility, joy, happiness, connection, and mindfulness. They have helped improve human emotional experiences and build one's connection with the power beyond oneself in moments of helplessness. Prayer helps cleanse the human heart, the mind, and soul. It also stirs up hope, courage, confidence, and patience (El-Guindi, 2008). It also manages emotional problems, such as anxiety, depression, and other such problems (Athar, 2005).

### **Islamic mindfulness**

*Definition of mindfulness.* In general, the term, "Mindfulness" is the translation of Pali or Sati, which means to remember to maintain awareness (Batchelor, 1997). It is also defined as the "awareness that emerges through paying

attention on purpose in the present moment and non-judgmentally to the unfolding of experience moment-to-moment” (Kabat-Zinn, 2003).

In nursing, mindfulness is defined as a process of transformation by which the person is growing in ability to “experience being present”, with “acceptance”, “attention” and “awareness” (White, 2013).

***Mindfulness in Islam.*** Mindfulness is the quality of consciousness which includes awareness and attention (Brown & Ryan, 2003). In Islam, Sufism is known as the mystical branch within the religion; Jalaludin Rumi, who was born in 1207, is one of Sufis that is known as a poet. His poetry is often quoted by most people to inspire states of awareness, mindfulness, compassion, and the divine (Knight, 2010). Likewise, Mirdal (2010) describes the similarities between mindfulness and Sufism. Rumi explained about acceptance and the acknowledgment of positive and negative experiences. Conforming to El-Guindi (2008), the mindfulness in Islam can be produced by intermittent prayer throughout the day, one whole month every year of strict fasting, strict adherence to ritual requirements throughout the pilgrimage (El-Guindi, 2008). Similarly, most of the qualities or components that are found on mindfulness are relevant to the rhythm of Muslim life, such as patience, trust, non-reactivity (composure), wisdom, and compassion (El Guindi, 2008).

In keeping with this, Yusaf (2005) stated the application of Islamic mindfulness practices, including prayer/*salat* (prescribed prayers five times a day), *dzikr* meditation, and *Quran* recitation as a spiritual exercise. Some kinds of Islamic-based mindfulness practices are described as follows.

### ***Prayer***

*Prayer definition.* In different religions, prayer has different connotations and performance methods. Therefore, it is necessary to provide a clear understanding the meaning of prayer's according to Muslim perspectives. The word "Prayer" is rooted from Latin, *precare*. It means "to ask for something" or "to beg."

According to the dictionary of Webster, prayer is as "entering into communion with God". And prayer is the way humans communicate with the holiness, the gods, the mystical world, or supernatural powers. It is proof that in different religions and times, prayer can be a collective or individual deed using different procedures and methods.

However, prayer has been defined in different ways by scholars. Daujat (1964) argues that the Latin word for "to pray" is *orare*, which originates from the word that means came out from the mouth. Prayer is a direct address to God or a higher power in an effort to express the need and implore fulfillment.

An influential German theologian, Karl Rahner (1904-1984), defines prayer as worship, blessing, religious offering, regret, penance. Prayer has been described as "any way of expressing personal, impersonal or transpersonal communion with the sacred" (DeLong, 1998).

On the other hand, "Prayer is the raising of one's mind and heart to God or the requesting of good things from God" (Ruland, 1994). This explanation includes both emotion and cognition aspects in the request to God.

*Prayer in terms of Islam.* One of Islamic pillars is prayer. Prayer is a religious practice, known as *salat* among Muslim. According to the Quran, *salat* can be applied to God and Angels, not necessarily for humans only (33:56). "For God, it means that



He inclines to be merciful to humans; for angels, it means asking forgiveness of God for humans; for humans, it means asking God for forgiveness” (Yücel & Nursi, 2010).

However, *salat* is a personal prayer or invocation that is different from any other religions. Prayer (*salat*) is a worshiping act which encompasses both physical movement of the body and silent *Quran* recitation through mind and soul. Quranic recitation and *du'a* are a part that cannot be separated in order to do *salat*. These specific recitations and supplications must be verbalized when the worshipper shifts from a certain position to another position. In the prayer, there are four principle positions namely standing, bowing, prostrating and sitting (Bhat et al., 2014; Ibrahim & Ahmad, 2012; Imamoglu, 2016; Ridzwan, Mahmood, Zakaria, & Ali, 2012; Rosmani Zainuddin, Ahmad, & Ramli, 2015; Safee, Abas, Ibrahim, Osman, & Salahudin, 2012).

According to Soysaldi (1996), the word *du'a* is rooted from d-a-wa. This root is in the Arabic language which literally means “to call upon, to lead someone to something, to invite someone, or to grieve after a deceased person”. In the Quran, the word *du'a* is described in some ways: as a worship’s form (10:106), asking God for help (2:23), calling of God to the humans (17:52), and extol to God (17:101).

Prophet Muhammad, peace be upon him, has described *du'a* in technical meaning. It is defined as “the essence of worship” and “the essence of servitude” (Yücel & Nursi, 2010).

*Du'a* is commonly considered as a communication’s form between someone and a higher power, although there were different definitions of *du'a* from scholars. *Du'a* is defined by traditional Muslim scholars as a worship’s form and an asking

from God, while contemporary *Quran* commentators and a Turkish Muslim theologian Hamdi Yazir (1992) defined *du`a* as “the subject to appeal for in a manner that indicates his need to God by thanking and glorifying him” (Yücel & Nursi, 2010).

Sufis define *du`a* as God’s mystical love. It is like a representation of a lover asking something from his/her beloved (Seriati, 1993).

This means that as the individual with advanced spiritually, actions will be his or her form instead of the verbal supplication, like mentioned above. Sufis' other definition is that prayer does not petition or ask; in essence, it is eternal praise (Yücel & Nursi, 2010).

Islamic prayer performed five times a day is an in-depth internal concentration practice and it increases focus attention. An increase in gamma power can identify this (Doufest, Ibrahim, & Safari, 2016). Similarly, some studies have reported a direct relationship between concentration and gamma power in Tibetan Buddhist and Chinese traditional meditation practices (Doufest et al., 2016; Lehmann et al., 2001; Litscher et al., 2001; Lutz, 2004). Furthermore, Aldahadha (2013) investigated the effects of prayer and a meditation program on mindfulness, using an experimental study with a sample of 354 female students in Oman. The results reported that there is a relationship between prayer and mindfulness.

To conclude, Islamic mindfulness can be achieved by practicing prayer. In other words, prayer can lead to increased mindfulness. Islamic mindfulness is not a technique, but an awakened state of mind resulting from prayer practice.

Moreover, there are two types of Islamic prayer; formal prayer and optional prayer.

*Formal prayer.* Formal prayer is the Islamic faith's second pillar. Prayer is a religious fundamental principle and a compulsory practice that has to be practiced at certain times under certain conditions following a set sequence. Compulsory prayer is a routine activity of Muslim that must be done five times a day; at dawn, noon, in the afternoon, at sunset, and in the evening (Bhat et al., 2014; Doufesh et al., 2014; Ibrahim & Ahmad, 2012; Ridzwan et al., 2012).

Prayer is a prescription from God for better health and fitness that is offered regularly. Accordingly, it is a natural way to keep oneself healthy. It may be considered as an alternative type of exercise similar to the activity of walking (Bai et al., 2012; Hashim et al., 2010). Furthermore, prayer should be offered coolly, calmly, religiously and spiritually to get the maximum benefits. Prayer would be invalid without a mindful witnessing of the presence of God (Imamoglu & Dilek, 2016; Rosmani et al., 2015). *Khushu* is a state of mind in prayer when we stand in front of God and entirely direct our minds and hearts to Him (Sayed & Prakash, 2013).

*Optional prayers.* Optional prayers mainly are performed before and after a formal prayer and at night as well as in the morning after sunrise (Henry, 2015). They do not contain “*rak’aa*” (cycle of movement) and help sustain the spiritual lives of Muslim and connect them with the God (Henry, 2015).

These optional prayers are comprise of the following: “prayer of *haja*”, a prayer that carried out in looking for a solution to difficult problems and in times of crises (Javaheri, 2006); “prayer of *istikhara*” is a kind of prayer that has the purpose implying God’s wisdom and guidance in decision making (Hambly, 2011); “prayer of *tasbih*” is a kind of prayer that has the purpose to praise and glorify God (Rasanayagam, 2006); “prayer of *tawba*” is a kind of prayer intended seeking for

forgiveness due to a sin (Hamdan, 2010); and “prayer of *safar*” is a kind of prayer that is done while traveling to ask for protection and safety throughout the journey (Henry, 2015); "*Dhuha* prayer" is intended to express gratitude for the new day and appeal for good fortune (Doufesh et al., 2012).

This study used formal prayers as many people have not realized that *salat* can be used as a therapy and is beneficial for those who perform it. Hence, this study gave guidance to the patients about how to perform prayer correctly. The study also conveyed the techniques and highlights of the therapeutic benefits that can be gained from the performance of the prayer technique.

The researcher evaluated the correct way of prayer using the Assessment of Khushu Prayer questionnaire, adapted from Nawansih and Purwanto (2012). The instrument has a high internal consistency with reliability with  $\alpha$  Cronbach amounting to 0.91. It consists of 30 items and five subscales, as follows: concentration (remember) on God during prayer; the heart can understand the meaning of the content readings of the prayer; exaltation and honor; fear of God; and able to embody the message of prayer in everyday life.

### ***Meditation.***

*Definition of meditation.* The term meditation is originate from the Latin word "meditation", from the verb "meditari" that means "to engage in contemplation or reflection" (Chiesa, 2010). Meditation is defined in Chambers 21st Century Dictionary (2012) as: deep thinking; contemplation, especially on a religious or spiritual theme.

Meditation is an activity that needs complete concentration on the present. It usually turns the concentration inwards, and away from the external world (Bagheri et al., 2013).

Scholars define meditation in various ways. Remez (2012) defines meditation as being used to express different conditions of inner equilibrium and to describe various ways of achieving peace. Meditation seeks to achieve peace, inner silence and spiritual awakening. Craze (2003) argues that meditation is a simple way to balance between physical and emotional or mental aspects, and is very suitable for pain reduction.

Congruent to Osho (2002), the essence of every religious experience is meditation. Meditation is a journey into the depths of one's essence to discover and visit one's real ego. Mediation for awareness-raising is another type of mediation that is met far beyond the mind (Bagheri et al., 2013).

Faali (2003) argues that meditation is a method to achieve spiritual purification, liberation of mind, and salvation from lust. It is the first step after suppression of thoughts, silence of mind and balance. Meditation starts with focus on present moment. It is more important and more profound than the first step. There is no controller to complete these two phases, as there is complete emptiness. This silence is the ultimate equilibration which is called Nirvana. Faali notes that you can find authentic real peace in true equilibrium.

*Meditation in Islam.* Meditation in Islam can simply be defined as the art and science of presence, of being here, now (Ihsan, 2012). In keeping with Olendzki (2009), Islamic meditation emphasizes the importance of establishing a personal relationship with Allah, and being aware of his presence constantly. Meditation

techniques might emphasize the awareness to the traditional actions of Islamic prayers, methodical repetitions of the divine name with prayer beads (*dzikr*), and the repetition of devotional poems and Quranic formulas.

In consonance with Al-Rawi & Fetters (2012), *dzikr* is a meditative practice. *Dzikr* refers to divine remembrance. Commonly, Muslims call *dzikr* meditation.

*Dzikr* meditation is usually done in accordance with Islamic prayer that can be practiced at any time. On a regular basis, *Dzikr* meditation is done twice a day wherever it is convenient to do, in the morning or evening (Soliman & Mohamed, 2013; Syed, 2003). In the *Quran*, the word *dzikr* is shown in (2: 152), (4: 103) and (3:190), God explains when Muslims need to *dzikr* (remembrance of Allah)

The procedure of *Dzikr* is usually divided into recall with the tongue (loud *dzikr*), and recall in the heart (silent *dzikr*) (Al-Rawi & Fetters, 2012). It can be interpreted as the heart's food and the soul's medicine. In order to do *dzikr*, it needs repetitive pronunciation of the names of divine or the formulae of religious. During *dzikr* meditation, the consciousness of the meditation object is directed to God. Among Muslims, believing in God (Allah) can help them in their lives from something wrong, such as, having problems or diseases. They believe that they will reach Allah, as it could help them to strengthen their soul, body, and mind (Saniotis, 2015). Furthermore, in its developed way, *dzikr* is generally associated with different ways of breath control (Al-Rawi & Fetters, 2012).

Breath *dzikr* meditation is the *dzikr* of consciousness by using the words, *Huu Allah*, a method of *dzikr* with the rhythm of inhaling-exhaling through the nasal cavity to the lungs and then exhaling through nasal cavity again. How to put it into practice is also very easy: when inhaling, the heart *dzikr*, *Huu* (which means: Allah,

God), and when exhaling, heart *dzikr*, *Allah* (God) (Purwanto, 2013). It affects someone in a growing awareness by focusing on objects in the particles of consciousness, such as breath flow, body sensations, sounds, thoughts, perceptions, and impulses (Sallum, 2006).

In essence, *dzikr* meditation requires us to be able to enter into a state of mind of submission to the Creator. Because, as we enter into resignation, we will be fully conscious of God. The more we can feel resigned and willingly accept the disease that we experience, the rest of the body will be in harmony to accept it with serenity. Ultimately, it will create a sense of relaxation and finally one will find a peace of mind. Additionally, *dzikr* meditation can produce a state of calmness and lead to psychological equilibrium when performed silently and in coordination with the breath (Purwanto, 2013; Saniotis, 2015).

In short, in meditation in Islam, equilibrium is achieved only through trusting God. Meditation is a means of approaching God rather than attaining non - spiritual peace.

To sum up, Islamic mindfulness is a quality of consciousness that watches without judgment or any thought. It is also the experiencing of sensations not a technique. Islamic mindfulness is an awakened state of mind resulting from meditation practice, whereas, meditation in Islam can lead to increased mindfulness because the means of meditation in Islam is to approach God. It is equal to the goal of Islamic mindfulness.

Based on the literature explaining that the practice of awareness takes a lot of forms, one popular practice is breathing awareness, particularly in mindfulness-based

therapies. Therefore, the researcher has applied the breath *dzikr* meditation as one kind of practice in an Islamic Caring Mindfulness-based Program.

**Relationship of mindfulness, meditation and prayer.** According to Monaghan and Viereck (2011), mindfulness is a state of awareness that is the result of meditation practice, it is not a technique nor is it the practice. In Islamic Sufism tradition, *dzikr*, mean “Remembrance of God,” and it is the main form of meditation. Meditation is concentration and focus (Mirahmadi & Mirahmadi, 2005; p.50). These practices of daily prayers and meditations assist the mystic in “stilling the mind” (Mirahmadi & Mirahmadi, 2005; p.50; Vaughan-Lee, 1999; pp.70-76). Vaughan-Lee (1999) captures the depth of this practice with these words, “The mind must be “hammered in the heart,” surrendered to the soul's higher purpose, so that our attention is not caught in the veils of illusion and world conflicts”. When the mind is completely still and empty, the person can experience “pure consciousness”. It means that he/she reaches a quality of consciousness.

Islam has prayer as the main method (as the second pillar in Islamic principles). Prayer in Islam is a meditative practice (Al-Rawi & Fetters, 2012; Olendzki, 2009). It is the main tool to gain oneness with God. In fact, if one cannot achieve a peaceful mind, relaxation and calmness even after prayer this means one is not yet with God. Therefore, in Islam, using prayer to connect with God is given more importance. In addition, Islam also has meditation (breath *dzikr* meditation) to facilitate in attaining a peaceful mind and in surrendering. Meditation is usually practiced following an Islamic prayer that can be practiced at any time. It is to facilitate being able to enter into a state of mind of submission to God and to attain constant remembrance of Allah (Helminski, 1992).



It seems that the main goal of mindfulness in Islam is to connect and surrender to God, and the ultimate goal is to have oneness with God. All in all, the relationship of mindfulness, meditation and prayer can state that practices of meditation and prayer can lead to increased mindfulness. In other words, the Sufism tradition employs practices identical to the concept of mindfulness through concentrating on a prayer and meditation to reach higher levels of consciousness, awareness and focus attention.

Overall, these reviews about mindfulness interventions demonstrate some effectiveness of Islamic mindfulness on spiritual well-being, and reduced fatigue as a health outcome. Therefore, the use of a spiritual approach with emphasis on the daily activity of care by nurses for Muslim can promote the recovery of patients and reduce their suffering.

**Islamic caring.** Islamic caring is a reflection of the eastern worldview which focuses on the whole human being and integrates and balances the spirit, body, and emotions (Rashidi & Rajaram, 2001). Three studies associated with Islamic caring have been found. They consist of the theory about caring from the perspective of Islam (Barolia & Karmaliani, 2008), the model of professional caring (Setiawan, 2010), and Islamic caring for the harmony of life (Ismail & Hatthakit, 2018).

The ground theory of Islamic caring from Barolia and Karmaliani (2008) is based on the perception and experience of Muslim nursing scholars. They developed the Islamic caring theory based on the information from the scholars. Subsequently, the combination of the theory and Islamic concept is used as guide in the caring actions.

Setiawan (2010) developed a professional caring model in order to enhance quality of nursing care provided in an intensive stroke care unit by using action research. The study involved 17 nurses, 7 nurse supervisors, a physician, a physiotherapist, a pharmacist, 30 patients and 30 family members. The model adopted Watson's Theory of human caring as a conceptual framework. Since the concept was developed based on Western culture, it may not be culturally sensitive to Muslim people. The action of caring as a result of the study could capture very little in the Islamic context, such as nurses in the study usually suggested that the family members should pray for their loved ones (Setiawan, 2010; p.102). The implementation of the professional caring model showed significant improvement of the quality of care, however, a suggestion was made that nurses should be creative to expand the spiritual component of caring, due to spirituality as a main priority for the patients and their family in Indonesian culture.

Another caring model was developed in Indonesia, and was later based on Islamic caring theory, to bring harmony of life to Muslim patients with a critical illness in the ICU (Ismail and Hatthakit, 2018). The Islamic caring theory based on Barolia and Karmaliani (2008) was adopted to guide the study. Twenty-four nurses, and fourteen patients and their families were involved in the action research. The study extensively explored Islamic culturally specific caring actions that the nurses successfully used to enhance harmony of the critically ill patients through the creation of the four types of connectedness used in the study. They were: 1) connectedness with self, 2) connectedness with others (nurse, families, and significant others), 3) connectedness with God, and 4) connectedness with the environment. It was

concluded that harmony was achieved through caring actions of nurses integrating the power of faith in God into their practice.

In the current study, the researchers utilize the knowledge gained from the previous studies to further develop a nursing program to be implemented in wider Muslim population. The Islamic caring approach according to Ismail and Hatthakit (2018) is used to develop the four domains of connectedness and integrating mindfulness practice (prayer and breath *dzikr* meditation) to help promote spiritual well-being and reduce fatigue in advanced breast cancer patients undergoing chemotherapy.

### **Intervention to Enhance Spiritual Well-Being in Patients with Advanced Breast Cancer**

Interventions to improve spiritual well-being have been investigated. From the findings of the literature review, there were seven systematic reviews and meta-analysis, two systematic reviews, nine randomized control trials, one quasi experiment, and one mixed method.

Twenty articles regarding interventions to improve spiritual well-being were grouped into three main categories: meditation, mind-body-spirit therapy, and spiritual intervention. Of the 20 reviewed articles, 13 studies demonstrated positive findings on spiritual well-being (Adamsen et al., 2009; Cramer., et al., 2012a; Cramer et al., 2012b; Fjorback, Arendt, Ørnbøl, Fink, & Walach, 2011; Jafari, Farajzadegan, Zamani, et al., 2013; Jafari, Zamani, Farajzadegan, et al., 2013; Knols, Aaronson, Uebelhart, Fransen, & Aufdemkampe, 2005; Kristeller, Rhodes, Cripe, & Sheets,

2005; Ledesma & Kumano, 2009; Oh & Kim, 2014; Speca, Carlson, Goodey, & Angen, 2000; Zamaniyan et al., 2016). Seven studies demonstrated negative findings for spiritual well-being (Breitbart et al., 2012; Djuric et al., 2009; Eyles et al., 2015; Henry et al., 2010; Zhang et al., 2016). Findings from each category of the articles are described below.

**Meditation.** Meditation, including Mindfulness-based Stress Reduction (MBSR), was found to enhance spiritual well-being of breast cancer patients and patients with the heterogeneity type and stage of cancer during treatment (Cramer, Lauche et al., 2012; Fjorback et al., 2011; Ledesma & Kumano, 2009; Speca et al., 2000). However, a few studies showed inconsistent effects on spiritual outcomes (Eyles et al., 2015; Zhang et al., 2016). Zhang et al. (2016) reported that MBSR has no significant outcomes of stress and spiritual well-being. Likewise, Eyles et al. (2015) explained that the associations between the practice of mindfulness and depression improvement are nothing. Therefore, to permit unequivocal conclusions about the effectiveness of meditation and MBSR in improving spiritual well-being, further research is warranted.

**Mind-body-spirit therapy.** Yoga and tai chi have been used for breast cancer patients. For instance, Cramer, Lange, Klose et al. (2012) conducted a systematic review and meta-analysis with 12 RCTs using yoga for breast cancer patients and survivors. Various types of yoga were used to improve spiritual well-being, such as, iyengar yoga, the yoga of awareness, viniyoga, restorative yoga, Patanjali's yoga tradition, yoga in daily life and hatha yoga. The researchers reported that yoga significantly increased spiritual well-being outcomes.

**Spiritual interventions.** From the literature review, of one meta-analysis, three RCTs, and one quasi-experimental study showed that a spiritual intervention was significant for enhancing spiritual well-being (Jafari, Farajzadegan, Zamani et al., 2013; Jafari, Zamani, Farajzadegan et al., 2013; Kristeller, Sheets, Johnson, & Frank, 2011; Oh & Kim, 2014; Zamaniyan et al., 2016).

A broad range of spiritual interventions were implemented in the existing literature review to improve spiritual well-being for advanced breast cancer survivors. A meta-analysis on spiritual interventions for patients with cancer included seven randomized and seven nonrandomized trials. There are mainly two types of spiritual interventions found in existing literature namely existential interventions and religious interventions. Most of the studies used religious interventions, including spiritual nursing care, spiritual counseling, spiritual interventions assisted by oncologists, and meditation focused on spirituality. Most of the spiritual interventions were provided by nurses, furthermore, the most frequent treatments used an individual approach. From the spiritual intervention studies, the mean for sessions' number is 7 sessions. The mean for the intervention duration is 6.4 weeks, and the mean for each session is 46.3 minutes.. The findings concluded that spiritual interventions had a very important impact on spiritual well - being, life meaning, and depression (Oh & Kim, 2014).

However, one weakness of the study showed that the heterogeneity of the study designs creates a meta - analysis technique that can hardly be used to summarize the effects of interventions because non-randomized studies tend to be at risk of bias in selection. Hence, the findings of spiritual interventions should be interpreted with caution in order to have good results. Whereas, the strength of this

meta-analysis study is the spiritual interventions that were conducted by the most patients with advanced cancer, thus closer to my study.

Regarding the religious interventions, the researcher found that spiritual therapy based on the Islamic approach helped enhance spiritual well-being of breast cancer patients. Jafari, Farajzadegan, Zamani et al. (2013) and Jafari, Zamani, Farajzadegan et al. (2013) investigated Iranian women with breast cancer using a randomized control trial design. This program of spiritual therapy consisted of six sessions, each session had a theme combining a specific domain of spirituality and terminated with a 20 to 30 minute guided relaxation and meditation exercise. The program was conducted for six weeks duration. Each session comply to two to three hours. The results revealed that emotional functioning and spiritual well-being of women with breast cancer can be enhanced. The same result was reported by Zamaniyan et al. (2016) from their quasi-experimental project, among 12 participants in the experimental group of Iranian women with breast cancer who are comply to spiritual group therapy. The therapy is lasted for 12 sessions with each session lasted for 120 minutes within a week. The therapy included self-consciousness, communication with oneself, self-concept, the word of God, altruism, relationship with holy sites, forgiveness, death and fear, faith and trust in God, gratefulness and blessings, and a final session. They concluded that the program can be applied to increase breast cancer patients' spiritual well - being.

On the whole, mindfulness (MBSR) and the spiritual religious interventions were clinically and statistically associated with significant improvement in spiritual well-being and fatigue outcomes in breast cancer patients including advanced breast cancer. However, all the existing MBSR have been undertaken in other countries

rather than Indonesia, and there are only a few Islamic intervention programs among ABC. Therefore, the researcher implemented a mindfulness or spiritual intervention in women with ABC in Indonesia. The researcher also assumed that this program would be beneficial to manage the physical health and spiritual well-being of advanced breast cancer patients in Indonesia.

### **Intervention to Reduce Fatigue in Patients with Advanced Breast Cancer**

Interventions to reduce fatigue have been investigated and are described here. The findings from the database literature reviewed consisted of three systematic reviews and meta-analyses, 17 RCTs, one quasi-experimental, and one mixed method. Twenty-two articles regarding interventions to reduce fatigue were grouped into four main categories, meditation, mind-body intervention, spiritual therapy, and physical exercise. Of the 21 reviewed, only 5 studies had negative findings, 2 studies are based on the meditation/MBSR (Eyles et al., 2015; Ledesma & Kumano, 2009), and three studies of physical exercise categories (Brown et al., 2006; Dimeo, Thomas, Raabe-Menssen, Pröpper, & Mathias, 2004; Headley, Ownby, & John, 2004).

**Meditation.** According to two meta-analyses, MBSR is effective in getting a significant outcome for fatigue (Kim et al., 2013; Zhang et al., 2016). Similarly, some RCT's proved that the MBSR program brought significant improvement in fatigue during and after treatment for breast cancer patients and heterogeneity cancer survivors as well (Carlson & Garland, 2005; Johns et al., 2015; van der Lee & Garssen, 2012). MBSR is an integrated program that has been recognized as hopeful for cancer-related fatigue and feasible of further study (Johns et al., 2015; Mustian et

al., 2004; Sood, Barton, Bauer, & Loprinzi, 2007). The quality of mindfulness cultivated through experiential and didactic learning which contains meditation and yoga. Through the MBSR, the participants train less reactive, and more healthy reactions to pressured conditions. The gentle hatha yoga in movement can work for neutralizing deconditioning due to the physical laziness that is commonly experienced by those with cancer-related-fatigue (Johns et al., 2015). In contrast, one meta-analysis of heterogeneity cancer patients and one mixed method study on metastatic breast cancer showed a negative effect on fatigue outcome (Eyles et al., 2015; Ledesma & Kumano, 2009). The results stated that a small effect size where  $d=0.17$  which was not statistically significant and there was no association between mindfulness practice and improvement in fatigue, respectively.

Additionally, rarely research has concentrated exclusively on the experiences on fatigue of women with advanced breast cancer, perhaps owing to the difficulties of recruiting them for research studies. However, on the whole, the results of the study recommend that MBSR could be effectively conveyed to relatively stable patients with advanced breast cancer. Even though, the MBSR training necessitates a considerable time commitment.

**Mind-body intervention for fatigue.** Mind-body approaches, such as yoga, has been used to treat cancer-related fatigue (Bower et al., 2014).

**Yoga and others.** Several studies have used yoga, mock healing group, cognitive-behavioral therapy, and internet-based education programs. It was reported that Iyengar-based yoga program for breast cancer survivors who have fatigue significantly reduced as compared to control group (Bower, Garet, and Sternlieb, 2011). Likewise, similar reductions of fatigue in the mock healing group were also



observed (Jain, Pavlik, Distefan, & Mills, 2009). Furthermore, individual cognitive-behavioral therapy in one trial resulted in decreasing of fatigue significantly compared to control patients who were without treatment (Gielissen, Verhagen, Witjes, & Bleijenberg, 2006). The decreasing pattern of fatigue was maintained during the next follow-up period, i.e., one to four years (Gielissen, Verhagen, & Bleijenberg, 2007). Moreover, internet-based education program also notably reported having a positive effect towards reducing fatigue as compared to the untreated wait-list control group (Yun et al., 2012). In general, it was concluded that the mind-body intervention has displayed positive effects to reduce fatigue.

**Spiritual therapy.** More interestingly, one RCT study among breast cancer patients undergoing radiation therapy used spiritual therapy based on an Islamic approach to examine fatigue as a secondary outcome. This program consisted of six sessions (introduction, relaxation and meditation, control, identity, relationship and prayer therapy or supplication). The program was lasted for six weeks, with two to three hours for each session. From this study show that the program has a significant outcome on fatigue ( $p=0.00$ ). Likewise, a quasi-experimental pretest and posttest study using purposive sampling with 20 Muslim patients with breast cancer undergoing FAC (5Fluorouracil, Doxorubicin, and Cyclophosphamide) chemotherapy used five daily prayers for three weeks while receiving chemotherapy. The results of the study revealed that prayer benefited in the reduction of cancer-related fatigue ( $p = 0.004$ ) (Aisyah, 2017).

**Physical exercise.** A Cochran review by Cramp and Byron-Daniel (2012) of 56 RCT studies (28 breast cancer studies) that studied all-stages of cancer patients concluded that fatigue management for patients both during and after active cancer

treatment benefited from moderate exercise (Cramp & Byron-Daniel, 2012), particularly for breast and prostate cancer patients. Nevertheless, there is insufficient evidence to specify the best type of exercise or exercise intensity for decreasing cancer correlated fatigue.

Additionally, there is emerging evidence that physical exercise may be effective in treating fatigue, particularly for breast cancer patients undergoing chemotherapy. One RCT and one systematic review confirmed that physical exercise significantly improves fatigue for women with breast cancer undergoing chemotherapy and all-stages of cancer (Adamsen et al., 2009; Cramp & Byron-Daniel, 2012). Although, there are some indications that imply the advantage of physical exercise for reducing fatigue among breast cancer patients during treatment, yet the evidence still not certain because of the results are still inconsistent. Three RCTs with 115 patients with advanced cancer (Brown et al., 2006) used physical activity with a multidisciplinary intervention in eight sessions with 90-minutes per session over four weeks. Headley et al. (2004) have conducted a program involved thirty-eight participants with advanced breast cancer during chemotherapy treatments four cycles used a videotape of home, three times per week. Sixty-nine patients with cancer after surgery, by Dimeo et al. (2004), used aerobic exercise and a psychosocial intervention, stationary biking for 30 minutes, five times weekly or a progressive relaxation of 40 minutes three times per week, for three weeks. The studies reported conflicting effects in terms of the benefit of exercise for those populations. One possible explanation may be that Headley et al. (2004) assessed the most effective intervention in which patients participated in a less intense course (seated exercise for 30 minutes, three times a week, with one week break between sessions) (Headley et

al., 2004). In comparison to the less effective intervention of Brown et al. (2006), the patients requested to do stretching, strengthening, balancing and gait course over eight 90 minute sessions in four weeks (Brown et al., 2006). As such, it is recommended that a 30 minute seated exercise is a reasonable management strategy in alleviating fatigue among advanced breast cancer patients.

To summarize this review about interventions for improving spiritual well-being and fatigue, the effectiveness of MBSR, yoga, spiritual interventions, physical exercise, and tai chi were demonstrated. However, some studies required a well-designed RCT with large sample sizes, an adequate program, such as, the length of the program, frequency, and standardize training using a trainer who met a specified criteria.

### **Mindfulness Mechanisms to Enhance Spiritual Well-Being and Reduce Fatigue**

The possible hypotheses involving relationships of mindfulness and its effects on spiritual domains and fatigue are explained. The mechanism of the body regarding prayer and breath *dzikr* meditation practice described below.

The Islamic mindfulness program consisting of the practice of prayer and breath *dzikr* meditation, the possible mechanism relating to enhance spiritual well-being and reduce fatigue can be explained as follows.

Prayer is a form that needs a combination of mindfulness, mental precision, affirmation, devotion, and stretching. It has deep effects on the body and soul. It is the act of combining physical and spiritual domains and involves complete obedience and submission to Allah (Imamoglu, 2016; Rosmani et al., 2015).

Muslims believe that prayer will make them connected to Allah (Henry, 2015; Imamoglu, 2016). Thus, prayers are a sign of faith, and it could yield remarkable spiritual energy that could heal people and transform them. Prayer can energize and help persons to escape stress and negative feelings (Henry, 2015). Sayeed and Prakash (2013) argued that individual who is performing pray, had a positive hopefulness as they could cope frustrating condition with positivism. Additionally, Hamdan (2010) reported that peacefulness can be obtained with Islamic prayers. Praying also relieves worry and distress. If prayer is done correctly, it will provide the joy of being in the presence of God, as well as being comforting, provide joyfulness, keep the soul's spiritual character, and maintain faith. The prayer, in general, is a useful guidance particularly to approach any psychological maladjustments (Imamoglu, 2016).

Likewise, meditation with breath *dzikr* has psychological benefits that give a sense of comfort and the spiritual benefit of the feeling that focuses on God (Purwanto & Zulekha, 2007). The practitioner has a relaxing effect on the body system, which calms and relaxes the brain waves (and brought to the completely conscious (Maimunah & Retnowati, 2011). Muslims believe that God (Allah) will help them in any difficult situation in their life such as in any life problem or sickness. They believe that they will reach Allah. Accordingly, Allah can help them to strengthen their soul, body, and mind (Nasiri, Naboureh, & Fayazi, 2016; Soliman & Mohammed, 2013).

For the physical benefits, specifically reducing fatigue, Islamic prayer also can be considered as a slow moderate exercise (Bai et al., 2012; Hashim et al., 2010; Imamoglu, 2016). Twelve “rak'aa’ (cycle) is equal to 30 minutes of light daily

exercise as recommended by health experts. The postures of the prayers stretch various muscles and nerves, contributing a physical therapy to all the joints of the body (Imamoglu, 2016). Therefore, Islamic prayer can reduce fatigue as well (Aisyah, 2017).

In line with Bai et al. (2012) they reported that Islamic prayer can be used as a substitute for exercise of a patient who is unable to do strenuous exercise. The mechanism of muscle and joint movement in Islamic prayer is similar to walking exercise (Hashim et al., 2010). The concentration of prayer has the same benefits of meditation as mind and body exercise (At-Tharsyah, 2007; Sayeed & Prakash, 2013). Some research has already revealed that the mind and body exercises like yoga, tai chi, and qigong have been proven to effectively cope with cancer related fatigue (Chan, et al., 2013; Dujits, et al., 2010).

Similarly, Ibrahim & Ahmad (2012) also reported that Islamic prayer is a beneficial and effective method of exercise for people with fatigue because of its slow to moderate manner of exercise and muscle strength training. Likewise, the bowing position in Islamic prayer can stimulate the lungs due to the alignment of the spine and head to help diaphragm muscles for deep breathing (At-Tharsyah, 2007). After bowing, this continues to a standing position with both hands raised which can increase the flexibility of the chest muscles for breathing. It may help to clear the airways and improve ventilation (At-Tharsyah, 2007). Ultimately, Islamic prayer can increase oxygen delivery all over the body and improve the hemoglobin level, thus lowering the risk of fatigue.

The other benefit from the bowing movement is the stimulation of bowel circulation which increases the absorption of nutrients (At-Tharsyah, 2007). This will

increase the ATP which is necessary for muscle contraction so fatigue can be reduced.

In addition, the prostration movement supports the delivery of oxygen to the whole of the body especially in regards to human brain circulation. Prostration improves cerebral circulation which has a benefit for cognitive improvement (Reza et al., 2002).

Furthermore, cancer related fatigue due to motor impairment can be overcome with a standing position while putting the right hand over the left hand. This position will increase the blood flow in the area of the left motor cortex and stimulates sensory areas in the brain central gyrus (Rezaei et al., 2009). The activation of the premotor cortex in the brain will stimulate muscle movement more dynamically so that the motor disturbances during fatigue can be minimized (At-Tharsyah, 2007).

While undergoing chemotherapy, the disruption of the motor center is due to increased levels of TNF-RII (Tumor necrosis factor receptor type II) (Bower et al., 2011). TNF-RII is a pro-inflammatory cytokine that aggravates the complaints of fatigue. Pro-inflammatory cytokines will activate the afferent vagal nerve that inhibits the activity of skeletal muscle reflexes (Ryan et al., 2007). Complaints of fatigue can be overcome through the activity of anti-inflammatory cytokines on pro-inflammatory cytokines. Production of anti-inflammatory cytokines will be produced when the body is in a state of relaxation (Bower & Lamkin, 2013).

Additionally, prayer causes the body to come into a state of relaxation. Results of EEG examinations during prayer showed increased alpha waves (Doefesh et al., 2012). The conditions of relaxation during prayer can be achieved when praying with deep concentration. This can be achieved through the implementation of quietly and

slowly concentrating the mind fully on God (Azis, 2013). Concentration and the meaning of the prayers are said to be a process of transcendental meditation (Andreescu, 2011; Dooley, 2009). The process of meditation in prayer activities has an impact for reducing stress hormones, especially cortisol (Boelens, Reeves, Replogle, & Koenig, 2009; Sholeh, 2010).

Decreased cortisol levels will evidently produce anti-inflammatory cytokines, which will help fight pro-inflammatory cytokines as one of the predictors of fatigue (Bower & Lamkin, 2013). This opinion was reinforced by Antoni et al. (2009) in that patients who experiences fatigue and undertook stress management behavior therapy had lower cortisol levels and Th1 cytokines, with a ratio of IL2:IL4 higher. This further confirms that the serenity of relaxation is a form of psychological adaptation that will physiologically reduce fatigue.

Prayer can improve coping strategies to reduce psychological distress and fatigue (Azizan & Sa'ari, 2010; Dehghani, Dehghani, Zarezadeh, & Bs, 2012). Similarly, Ridzwan et al. (2012) stated that after the practice of prayer, it was found that gamma brain waves were higher when compared to the use of music therapy. Gamma waves illustrates that the brain is in the active process of thinking.

Effective coping strategies are required to prevent distress psychologies in patients undergoing chemotherapy because, a psychological distress condition is the most powerful predictor of the severity of fatigue (Bower et al., 2014; Horneber, Fischer, Dimeo, Ruffer, & Weis, 2012; Mock et al., 2007).

All in all, an Islamic mindfulness based program incorporating prayer and meditation as a mind body exercise may be offered as an alternative form of treatment

in cancer to enhance spiritual well-being and reduce fatigue for Muslim patients with breast cancer.

### **Factors Influencing Spiritual Well-Being and Fatigue in Breast Cancer Patients**

Health care providers need to consider the related factors that affect spiritual well-being and fatigue in breast cancer patients who are undergoing chemotherapy. Since these factors can worsen the spiritual well-being and aggravate fatigue. Based on several studies there are some factors that can affect the condition of spiritual well-being and fatigue. as follows.

**Demographic characteristics.** Based on the demographic characteristics, the spiritual well-being and fatigue among breast cancer patients are closely related to age, marital status, and coping ability.

**Age.** The study reported that high level of spiritual well-being is achieved by someone who is older. This indicates that spiritual well being has a positive correlation with age (Lazenby & Khatib, 2012).

Based on the study conducted by Bower et al. (2000) in 1,957 breast cancer patients, those who experienced fatigue were younger patients ( $\leq 54.87$  years old).

**Marital status.** The study found that divorcee Muslim women who had breast cancer have low spiritual well-being which indicates that spiritual well being has a negative relationship with divorce status (Lazenby & Khatib, 2012); being married is related to greater spiritual well-being (Mytko & Knight, 1999). Also, Oh and Seo (2011) stated that the role of the couple is very helpful in reducing fatigue. The couple plays a part in social support for breast cancer patients during their illness.



Social support can be used as a coping mechanism to reduce the distress that can aggravate fatigue (Oh & Seo, 2011).

*The ability of coping mechanism someone and religious factors.* Research in patients with breast cancer undergoing chemotherapy reported that a high spiritual well being correlated with the higher ability of coping mechanisms and religious factors in African-American women (Gaston-Johanson, et al., 2013). Also, someone's coping ability to deal with stress is closely related to fatigue; Hornerber et al. (2012) found that the experience of fatigue is more closely related to unstable emotional conditions in patients with cancer.

**Type of stages of breast cancer.** Based on the research regarding the type of stages of breast cancer, some studies reported greater fatigue in cancer patients with stage IV malignancies, compared to other stages (Aisyah, Hermayanti, & Agustina, 2014; Lewis et al., 2014). However, in terms of type of malignancy and the stage, spiritual well-being did not differ. For women, spiritual well-being scores were higher and lower in those with a higher malignancy stage. Spiritual well-being emerged as a major significant predictor of fatigue in treatment compared with the stage of the disease (Lewis et al., 2014).

**Type of treatment.** Based on the type of treatment, fatigue was more likely related to the combination of chemotherapy and radiation or chemotherapy alone for cancer treatment. The study of Bower et al. (2000), Woo et al. (1998) and Byar et al. (2006), most likely confirmed the findings, which showed that, patients who underwent a combined therapy of chemotherapy and radiation, or only chemotherapy experienced more fatigue than those who only took radiation therapy. Moreover, chemotherapy treatment using doxorubicin, doxotacel, cyclophosphamide followed

by taxane is more at risk at experiencing fatigue (Berger et al., 2009). Nonetheless, type of treatment had no related to spiritual well-being (Lewis et al., 2014).

## **Summary**

To conclude the literature review, it can be seen that there is a dearth of studies regarding Islamic based interventions, using the term mindfulness particularly in Indonesia as well as in the world. In addition, many mindfulness studies conducted in western cultures and small spiritual therapy studies from Mid-East cultures may not be applicable at all in the Indonesian culture. Therefore, the researcher developed the program based on the Islamic approach using the Muslim meditation or Islamic mindfulness practices which is congruent with the daily life religious practice of Muslims. Thus, the researcher assumes that the practice would be beneficial for Muslim patients specifically in Indonesia. Based on the reviewed literature, the mindfulness program has been shown to improve spiritual well-being, also alleviate fatigue with minimal costs and side effects, as well as the implementation is easy. Furthermore, this study was designed to assess pre- and post-spiritual well-being and fatigue outcomes with repeated measures to increase the precision and level of confidence.

## CHAPTER 3

### RESEARCH METHODOLOGY

This chapter provides an explanation about every element that needed for this research. This chapter describes the research design, variables, setting, population, sample, instrumentation, intervention, ethical issues, the procedure of the data collection, and data analysis. This study was designed as a randomized controlled trial and the researcher controlled, and managed the threats to statistical, internal, external, and constructed validity.

#### Research Design

The randomized control trial, two-group, pre-posttest, and repeated measure design was used to examine the effects of the Islamic Caring Mindfulness-Based Program (ICMB) on Spiritual Well-being and Fatigue in Indonesian Muslim women with Advanced Breast Cancer (Figure 3).

	T1	T2		T3		T4
Group	First day Cycle n	Day 3- 4	Cycle n + 1	Day 23-24	Cycle n + 2	Day 44- 45
Control	$O_1X_0$	$O_2$	$X_0$	$O_3$	$X_0$	$O_4$
Randomized Experimental	$O_1X_1$	$O_2$	$X_1$	$O_3$	$X_1$	$O_4$
	←————— $X_1$ —————→					

*Figure 3.* The study design

Note:  $X_0$  = Standard care,  $X_1$  = Islamic Caring Mindfulness-based Program (ICMB) provided for the whole period of the study (day 1- 42),  $O_1$  = Baseline,  $O_2$  = Post-test-1 (on day 3-4),  $O_3$  = Post-test-2 (on day 23-24),  $O_4$  = Post-test-3 (on day 44-45)

## **Variables**

The variables of the study were independent and dependent. The Islamic Caring Mindfulness-based Program was an independent variable of this study. The dependent variables were spiritual well-being and fatigue.

The potential confounding variables were age, staging of cancer, type of current treatment and marital status which were treated as covariates in the subsequent statistical analysis, which helped to increase the internal validity. These variables were controlled by randomization, as they could have affected the results of the study.

## **Research Settings**

The study was conducted in Bandung, West Java Province of Indonesia. The population is about 2,455,517 people and is comprised mainly of Sundanese followed by Javanese, Minang, Batak, Chinese and others (Badan Pusat Statistik Kota Bandung, 2010). Most citizens of Bandung are Muslim (80%) and the rest are Christian (17%), Catholic (2%), Buddhist (0.6%), and Hindu (0.4%).

The research study was carried out in a general teaching hospital, in Bandung. It is a 600-bed capacity hospital and offers a multi-range of health services that includes oncology, medical, surgical, pediatrics, obstetrics-gynecology, mental health, orthopedics, cardiothoracic, and neurology (Hasan Sadikin Hospital, 2014). It is a top hospital (Type A according to Indonesian hospital accreditation level) and is a referral hospital for West Java Province.

The study was conducted at the chemotherapy ward of Asnawati. This unit only received cancer patients who were undergoing chemotherapy. There were 11 nurses in the unit. All of them had graduated with a Diploma in Nursing. Their responsibility was to take care of the patients undergoing chemotherapy. Based on the researcher's observation, the nurses provided the patients with mainly routine care. The nurses were always assigned to perform some specific procedures for breast cancer patients, such as, preparing medicines and giving the chemotherapy infusion. They worked from 08.00 AM until 04.00 PM, five days weekly, Monday to Friday. It is a referral hospital that provides chemotherapy treatment. The patient receiving chemotherapy is not required to stay overnight after obtaining the chemotherapy unless she experienced any complications. The advanced breast cancer patients received chemotherapy with FAC (Fluorouracil, Adriamycin, and Cyclophosphamide), or CAF (Cyclophosphamide, Adriamycin, and 5-fluorouracil), TAC (Docetaxel/Doxorubicin/Cyclophosphamide) and Doxorubicin/Cyclophosphamide followed by Paclitaxel, for six cycles on average and each cycle lasts for 21 days.

According to the data obtained from the statistics in the unit, the number of advanced breast cancer patients undergoing chemotherapy at the Asnawati ward was about 211 per month. Whereas, the bed capacity was 35. The total number of patients with all types of cancer who were undergoing chemotherapy was around 30-38 patients per day.

## **Population and Sample**

**Target population.** All Muslim patients with advanced breast cancer either new or recurrent cases that came for chemotherapy treatment were the target for this study.

The criteria of the patients for this study were: 1) Muslim; 2) aged more than 18 years old to ensure they could legally give consent; 3) have diagnosed by a physician that the breast cancer patients have a diagnosis of stage III either newly or recurrently; 4) can perform basic daily activities with the Eastern Cooperative Oncology Group (ECOG) with a Performance Score of 0 – 2, 0 refers to fully active, no performance restrictions, 2 refers to able to carry out all self-care but incapable to perform any work activities, up and about >50% of waking hours, it was important for screening the patient's ability to perform prayer perfectly, 5) are cognitively intact and without a documented diagnosis of mental illness; 6) able to speak and understand Bahasa Indonesia; 7) have access to a telephone; 8) received chemotherapy treatments every 21 days at any cycle  $\leq 4$  cycles including the current cycle. Whereas, the patients were excluded if they had the following criteria: 1) regularly used complementary alternative medicine (e.g., reflexology, foot massage, pedicure with massage); 2) could not completely follow the program.

**Sample size estimation.** In the present study, the repeated measure statistics were employed for data analysis. Hence, the analysis was used to determine the sample size (Appendix C). In order to reduce the error of type II, the power of .80 was used. Meanwhile, type 1 was used for the significance level ( $\alpha$ ) which was set at .05 to reduce the risk of error. The sample size was determined based on the previous

effect size (ES). The effect size index for the t-test of a standard unit was calculated from the formula below (Cohen, 1988; p. 20).

The researcher estimated the value based on the result of a previous intervention study which investigated the impacts of mindfulness in the program of stress reduction on breast cancer survivors' spirituality and psychological well-being (Lengacher et al., 2009). This study showed that the mean score of the control group was ( $M_1$ ) = 33,  $SD_1$  = 8.91 and the mean score of the intervention group was ( $M_2$ ) = 28.3,  $SD_2$  = 9.15. Then these values were entered into the Cohen (1988) table.  $ES$  = 0.52 was obtained from that previous study, so, the function of the number was to decide the sample size by using the tables of Cohen (1988, p 30-31). In the Cohen table, for power 0.8,  $\alpha$  = 0.5,  $ES$  = 0.5, the sample size is 63, and if  $ES$  = 0.6, sample size recommended 44. Since  $ES$  = 0.52, the sample size was estimated to be between 44 – 63. Hence, the researcher decided to use a sample size of 50. Thus, the target sample for each treatment arm in this study was 50 samples, added by the attrition rate of 20%.

Regarding preventing attrition, a previous study showed the attrition rate for the study in advanced breast cancer at about 17.7% (Applebaum et al., 2012). To increase the confidence level of the study, the anticipation of the attrition rate that was used in this study was 20% (10 samples). So, throughout the study period, the sample size increased in each group, there were 120 participants (64 and 56 participants for the control and intervention group, respectively). Figure 4 shows the arrangement of steps in a conventional randomized design.

**Sampling technique.** The researcher recruited participants who met the randomization inclusion criteria. The research assistants helped to collect the data at

baseline, then, the researcher assigned randomly the eligible participants by using software. The minimized randomization software (version 2.01) facilitates in balancing the effect of potentially confounding variables in randomized controlled trials (Zeller, Good, Anderson, & Zeller, 1997). After collecting the data at baseline, the confounding variables consisting of age, stage of cancer, type of current treatment, and marital status were entered into the minimization program to allocate the participants into the intervention group or the control group.

The software results showed that there are 64 participants that were allocated in the control group and 56 participants that were allocated in the intervention group.



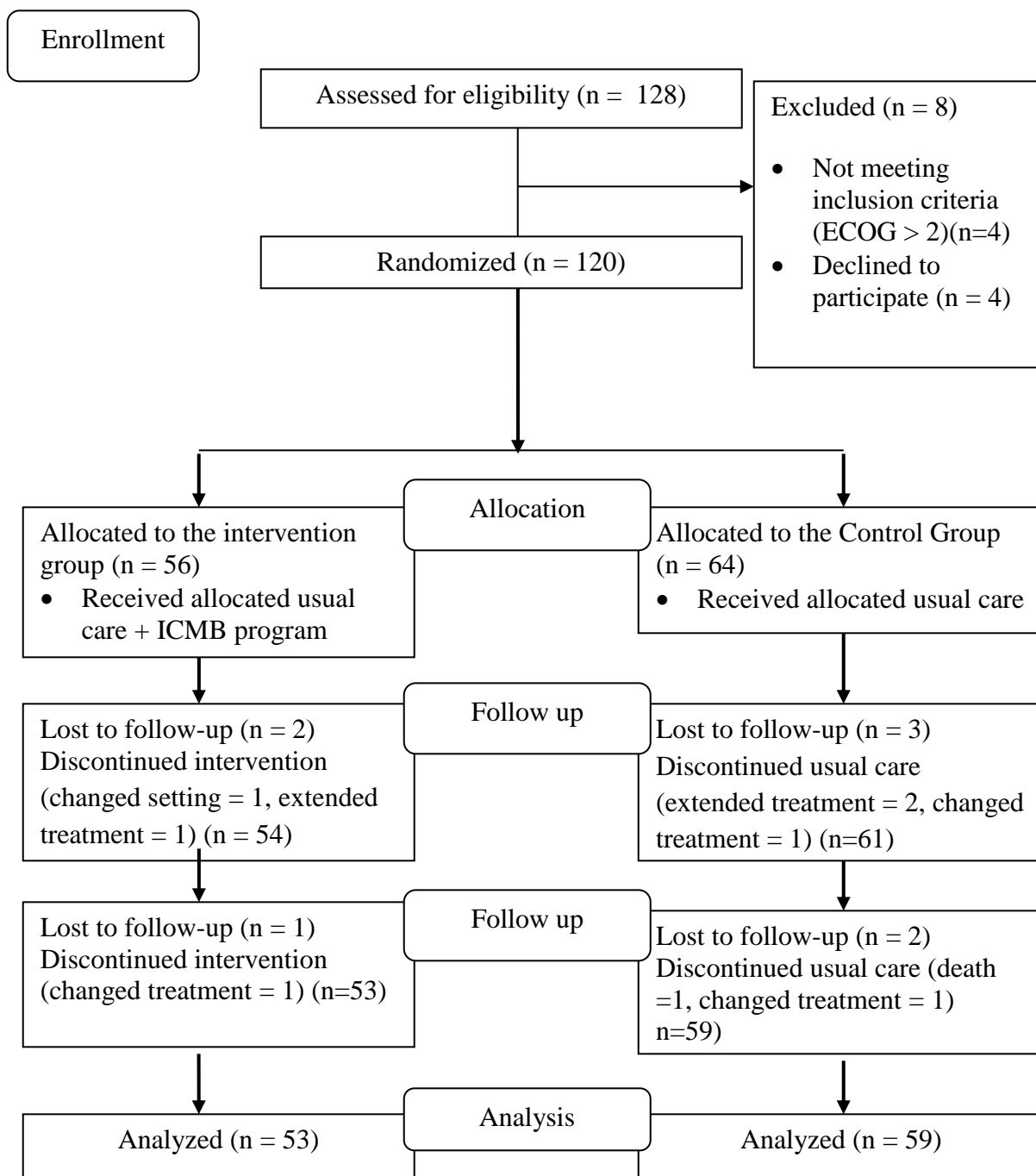


Figure 4. A diagram of recruitment of the participants

## **Instrumentation**

The study consisted of two main types of instruments: 1) Islamic Caring Mindfulness-Based Program (intervention program), and 2) Instruments for data collections. Details are given for each development, implementation, and measurement of the study instruments to construct the validity of the study variables. The language of the instruments were translated into Bahasa Indonesia from the English language using the translation technique standardization (World Health Organization, 2006), followed by content validation and reliability testing. In addition, the intervention program instrument was validated by experts.

**The intervention program.** The researcher developed The Islamic Caring Mindfulness-Based (ICMB) Program based on the Islamic Philosophy and Islamic caring approach. The duration of the program was six weeks which was determined on a previous study conducted by Jafari, Farajzadegan, Zamani, et al. (2013) and Jafari, Zamani, Farajzadegan, et al. (2013). The study reported that using 6 week-spiritual therapy with an Islamic approach to improve spiritual well-being and reduce fatigue was considered effective. The study comprised of three sessions of individual training. Furthermore, the details of the intervention program and instruments for measuring the health outcomes are given below.

*Session 1. Day 1 (in hospital).* The first session consisted of two stages, namely the preparation stage of the ICMB program and the implementation of the ICMB program.

*The preparation stage of the ICMB program.* The preparation stage of the ICMB program comprised of the establishment of a caring relationship, provision of information about the program, an invitation to the participants to join the study, provision of informed consent form, and a manual booklet and MP3.

*Establishing of a caring relationship.* This session started with building rapport between the researcher and participants. The potential participants were approached to form a good relationship. The researcher developed a sincere relationship with the participants using the Islamic caring approach (greeting, touching, showing respect and blessing in the Islamic way). She ensured her presence along the patient's journey toward healing with the support from God, by praying together for healing, as well as using touch in the Islamic way to show her attention and concern. It was necessary to encourage the patients and their families to face the disease and the risk of death with patience and to encourage them to continue to pray and ask Allah for recovery.

*Provision of the information about the ICMB program.* The researcher provided the information about the program. The goal of this intervention was to promote psychological and spiritual well-being and relieve fatigue that lead to recovery. For example, the researcher explained the benefits of religious practice and health outcomes in patients suffering chronic illnesses, such as cancer survivors (Visser, Garssen, & Vingerhoets, 2010; Lim & Yi, 2009). The faith in spirituality, along with religious forces, such as prayer and meditation, have an important role in disease acceptance, so, this could reduce depression and mental illness and improve the physical-psychological condition (Visser et al., 2010). In this program, spiritual activities and religious resources

have been incorporated through caring for healing the clients and as a result, a connectedness between the patients and supreme God was facilitated. The well connectedness with God was created when mindfulness was developed as a consequence of prayer and *dzikir* meditation practice. The strong relationship with the higher power could help improve spiritual well-being, and health as well as reduce fatigue (Kim et al., 2013). At this stage, the patients experienced calmness, and peacefulness described as completely surrendering to God. With the stage of mindfulness, the patients were more aware of their life situation, understood about the truth, and reacted with the reality in a more appropriate way based on the Islamic culture. Furthermore, the researcher invited the participants to join the study. If they agreed, the researcher gave them the informed consent form as well as providing a manual booklet and MP3 of guided breath *dzikir* meditation to enhance understanding and motivation for participation in the program. Thus, the baseline data were obtained from the participants at the end of this stage (pre-test, T1).

*The implementation stage of ICMB program.* This was the second stage of session one, and it consisted of the provision of knowledge, including the provision of general information about the ICMB program, the provision of knowledge about the disease and complications, and training, and coaching as well as time for the participants to practice and reflect. This stage was conducted by an individual approach. Concerning Oh & Kim (2014), the individual approach has the strength of decreasing attrition and missed sessions. In addition, this type of approach indicated a significant effect on spiritual well-being and depression.

*Provision of general information about ICMB program.* In this step, the researcher provided information about the program, including the objectives and benefits of the program. The participants were informed about the rules (confidentiality, regular practice or home practice). The goal of this session was to enhance the participants to have a greater understanding about the purpose of the whole program, what they did, and what the purpose of doing was, why they needed to do prayer and meditation correctly. The researcher explained what the benefits of prayer were and how to conduct good prayer through *khushu* prayer (prayer with mindfulness). Furthermore, the researcher explained about breath *dzikr* meditation, which included a definition, ways of practice, and the benefits of breath *dzikr* meditation, as well as a discussion about why the participants needed to follow and practice the program. Prayer is a compulsory religious practice for Muslim people during their lifetime. Why was it that they still had physical and spiritual problems? It has been evident that the practice of prayer with and without mindfulness provides different health outcomes. The correct practice of religious activities is very important in bringing a good result from the practice. For instance, Ijaz et al. (2017) reported that those who regularly offer prayer with mindfulness have better mental health compared to those who did not regularly offer it with mindfulness. Moreover, spiritual therapy that included prayer activities and reading *Quran* could reduce the level of anxiety in mothers that had children who suffered from cancer (Dehghani et al., 2012), also, the coping ability of cancer patients undergoing chemotherapy was better in patients who performed prayer regularly than patients without regular prayer (Rezaei, 2009). Another study showed that prayer therapy was a useful physical exercise in improving cognitive function and could serve as a substitute

for strenuous physical exercise for elderly patients (Bai et al., 2012). Furthermore, the researcher explained that the program would help to strengthen and purify their minds, improve their awareness and acceptance of their disease condition and the treatment results after all possible efforts had been made to treat the disease as guided by God.

*Provision of knowledge about the disease and complications.* The researcher provided detailed knowledge and information, and discussed the disease, the most common problems and complications and how to prevent them, for example, chemotherapy side effects, such as, queasiness, vomiting, stomatitis, fatigue, hair loss, cognitive impairment, weight gain, etc., and how to manage them. When providing the information, the researcher used the teach-back method to ensure the participant's understanding and ultimately to enhance motivation to continue the practice and follow the program. The information also helped support the participants to understand their disease and helped them calm down and reduced uncertainty.

*Provision of training, coaching and practice for the participants.* In this step, the researcher provided training, coaching and a demonstration of the practices regarding *khushu* prayer (around 10 minutes) and breath *dzikr* meditation (around 30 minutes) followed by reflection. The researcher assessed the *khushu* prayer and breath *dzikr* meditation to ensure that the participants practiced them correctly, as well as measuring the level of mindfulness after the practices. If the participant could not achieve a high score when performing the prayer, then the researcher re-taught the participant to achieve the desired score, this means that the participant could then perform the prayers correctly.

*Reflection.* Reflection was conducted to evaluate the intervention program after the practices. The main goal of this step was to get feedback of the patients' direct experiences after receiving the intervention and get in touch with their feelings, such as peacefulness, the true meaning of life, and hopefulness. As well as physical weaknesses, cognitive, affective and perceived impacts due to fatigue, reflection was an important technique to enhance an awareness and feeling of peace as a result of being able to accept the disease, treatment and its impacts.

After the completion of the reflection, the participants were assigned to perform the correct prayer and breath *dzikir* meditation in their home. In this program, prayer refers to the obligatory prayer that was performed five times a day. The prayers must be done at dawn, noon, afternoon, sunset, and evening, whereas the breath *dzikir* meditation was practiced twice a day for about 60 minutes (Purwanto, 2013), in the early morning and the evening. Moreover, daily practice at home was documented using the Home Practice Record form. Any problems or difficulties were also noted. The researcher made telephone calls to evaluate the participants or families for reminding them and discussing the program if needed. Also, for measuring all of the dependent variables (spiritual well-being, and fatigue), the participants were contacted by telephone between 48 and 72 hours after receiving chemotherapy treatment. This timeline was designed because it is known that the highest level of fatigue was between 48 to 72 hours following treatment (Battaglini et al., 2008; Byar et al., 2006; Junghaenel et al., 2015; Meek et al., 2000; Sura et al., 2006;). It could also influence the spiritual well-being variable levels (Bower, 2014; Lewis et al., 2014).

*Day-2 till day-20 (home practice).* The participants implemented the daily home practice or application of the treatment. Every three days the researcher followed up on the practice by phoning the participants for reminding, checking and reflecting on their feelings and problems related to the program. In addition, the researcher provided her telephone number for contact, if they had any problems regarding the practice of the program at home.

*Session 2. Day-21 (in hospital).* The participants came to the hospital for the next cycle of chemotherapy (n+1). In this session, the preparation stage of the ICMB program comprised of the continuation of a caring relationship, such as greeting, touching, respecting and blessing in the Islamic way, praying together for healing and asking help from Allah. Also, the researcher encouraged the patient and their family to be patient with the illness.

Subsequently, self-report of daily practice at home was checked, reviewed and discussed, including the date, duration of the practice, feelings, thoughts, and any problems or difficulties that might have been encountered during the practice. Afterward, prayer and breath *dzikr* meditation was practiced. The details of the interventions are described as follows:

*Individual practice.* In the hospital, the participants practiced prayer and breath *dzikr* meditation, firstly, the researcher checked the confirm the correct practice of prayer and breath *dzikr* meditation. Whereas, the participants practiced the *khushu* prayer around 10 minutes and breath *dzikr* meditation around 30 minutes.

*Reflection.* A reflection was conducted one by one to evaluate the program after the practices and to encourage the participants to reflect on their feelings, problems and



barriers regarding the practice of the intervention program. As well as this, the program was reviewed and discussed. Subsequently, the second post-test was held by phoning the participant at home between 48 to 72 hours after the participant had received chemotherapy.

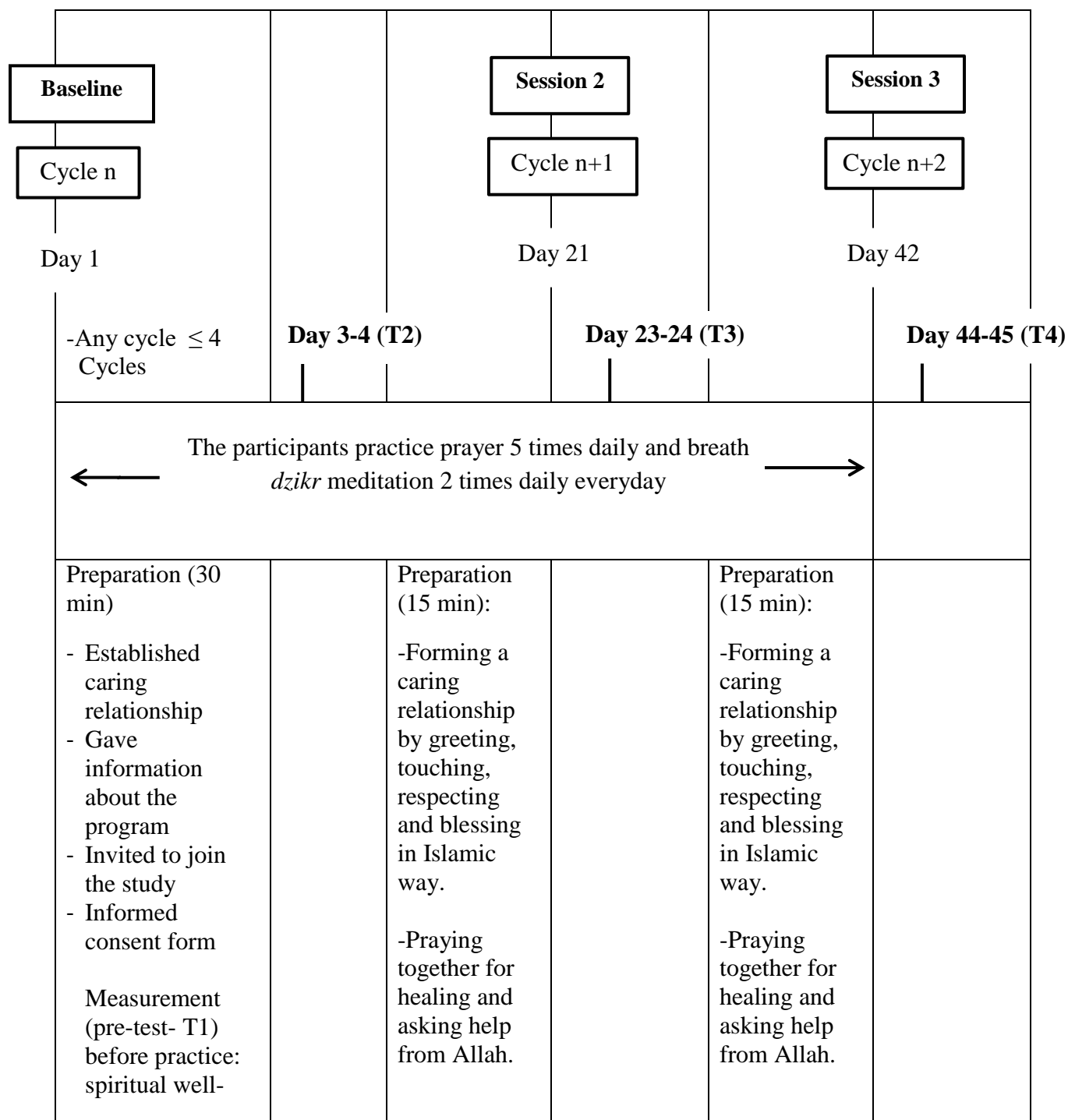
*Day-22 till day-41 (home practice).* The participants practiced the program daily at home. Every six days the researcher made a phone call as a reminder and also as an opportunity for the participant to reflect on their feelings and any problems they had.

*Session 3. Day-42 (Ending session in hospital).* The preparation stage of the ICMB program in the ending session comprised of the continuation of a caring relationship, such as greeting, touching, respecting and blessing in the Islamic way, praying together for healing and asking help from Allah. Also, to encourage the patient and their family to be patient with the illness. Afterward, the researcher checked self-monitoring, termination and evaluation of the intervention program. This session was divided into 2 stages, as follows:

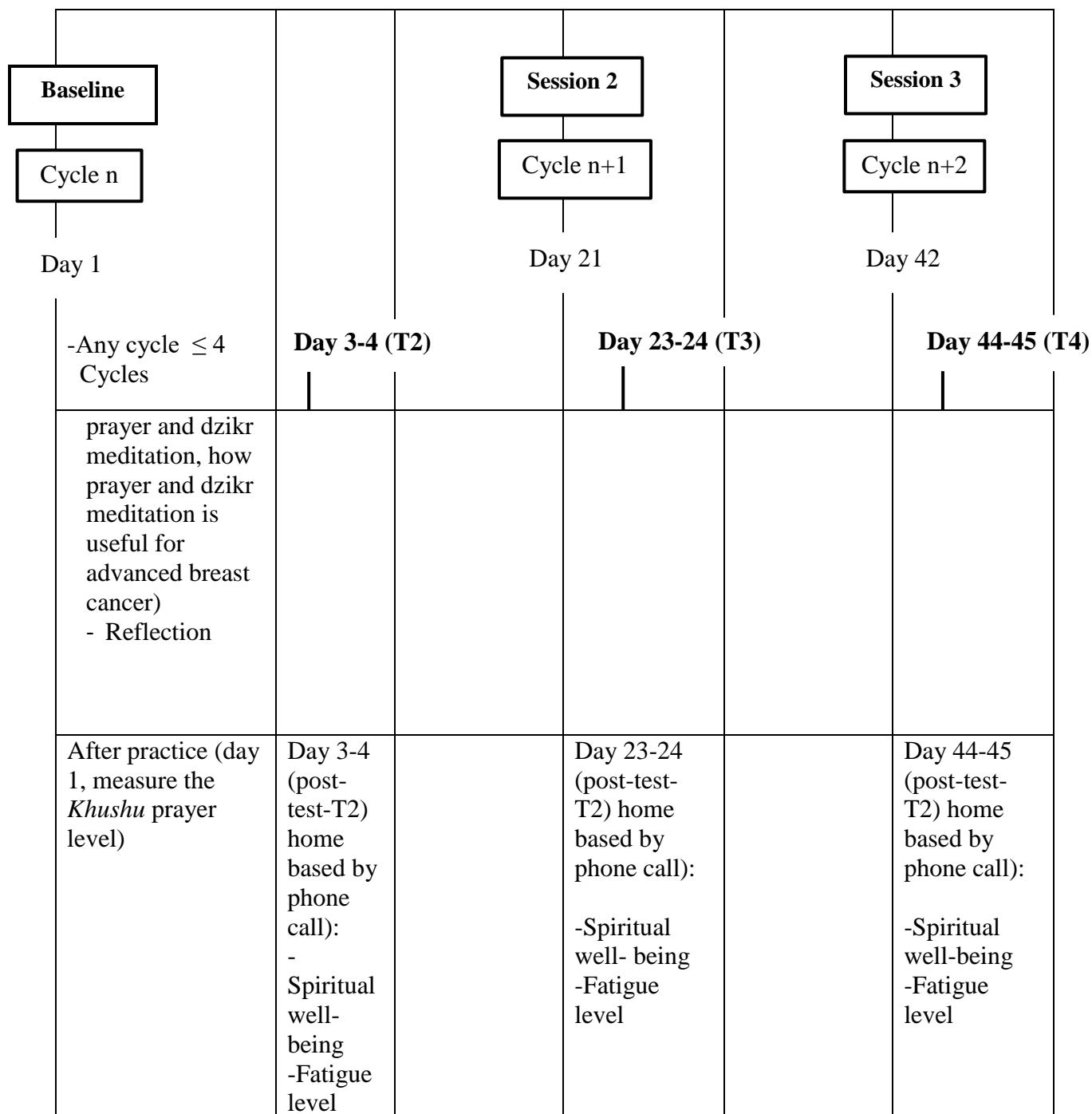
*Individual practice.* In this session, the researcher encouraged the participants to practice the prayer and breath *dzikr* meditation for the last session in the program.

*Reflection.* For completing the program, the researcher also evaluated the effectiveness of the intervention program using reflection. The participants were asked to express their feelings after completing the intervention program and to discuss any problems or difficulties. They were also encouraged to continue the practice of the Islamic Caring Mindfulness-based intervention program.

For the last data collection, within 48 to 72 hours after receiving chemotherapy, the researcher contacted the participant in their home by phone to finish the last measurements of the dependent variables (spiritual well-being, and fatigue).



<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">Baseline</div> <div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">Cycle n</div> Day 1		<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">Session 2</div> <div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">Cycle n+1</div> Day 21	<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">Session 3</div> <div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">Cycle n+2</div> Day 42	
-Any cycle $\leq$ 4 Cycles	<b>Day 3-4 (T2)</b>	<b>Day 23-24 (T3)</b>	<b>Day 44-45 (T4)</b>	
<ul style="list-style-type: none"> <li>being and fatigue level</li> <li>- Gave the booklet</li> <li>- Gave the MP3 and headset</li> <li>- Provision of knowledge about the disease and complications (i.e., what is the breast cancer, stages of breast cancer, causes and risk factors, treatment and its side effect, symptoms management).</li> <li>- Training, coaching &amp; practicing prayer and breath <i>dzikr</i> meditation (i.e., what Quran says about prayer and <i>dzikr</i> meditation, benefits of prayer and <i>dzikr</i> meditation, how to perform</li> </ul>		<ul style="list-style-type: none"> <li>-Encouraging the patient and the families to be patient with the illness</li> <li><i>Individual practice(the participants):</i> <ul style="list-style-type: none"> <li>-Prayer (10 min)</li> <li>-Breath <i>dzikr</i> meditation (30 min)</li> <li>-Reflection (5 min)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>-Encouraging the patient and the families to be patient with the illness</li> <li><i>Individual practice(the participants):</i> <ul style="list-style-type: none"> <li>-Prayer (10 min)</li> <li>-Breath <i>dzikr</i> meditation (30 min)</li> <li>-Reflection (5 min)</li> </ul> </li> </ul>	



Note: n = the number of chemotherapy cycles when first joined the program (cycle  $\leq$  4)

Figure 6. A diagram of the ICMB Program

## The Instruments

There were two types of the instruments,

### **1. Instruments used to confirm the correctness and adequacy of the practice of Islamic prayer and meditation.**

The instruments were the Khushu Prayer Questionnaire and Self-report of Daily Practice at Home. The descriptions of each instrument and the validity and the reliability of the instruments are presented as follows.

**1.1 The Khushu Prayer Questionnaire.** The *Khushu* Prayer Questionnaire was developed by Nawansih & Purwanto (2012) and was used to ensure that a participant practiced prayer correctly. This instrument, (Likert scale) has a high internal consistency with reliability with  $\alpha$  Cronbach amounting to 0.906. It consists of 30 items based on the indicators of concentration (remembering) on God during prayer, the heartfelt effort to understand the meaning of the content readings of the Islamic prayer (*salat*), exaltation and honor, fear of God, and the ability to embody the message of prayer in everyday life. The measures used are strongly agree (4), agree (3), disagree (2), and strongly disagree (1). The highest score of the *khushu* prayer level was 67, and the lowest was 49, categorized as follows, low < 56, moderate 56-60, and high > 60. However, following the scoring from the previous study was not suitable for this study. So, the researcher modified the categories of scoring as follows, the possible score of the instrument ranged from 30 – 120, thus, the higher score of the *khushu* prayer is 75 – 120, and the lower score is 30 – 74. The instrument was already in the Indonesian version.

**1.2 Self-Report of Daily Practice at Home.** A self-report form documenting prayer and meditation practice at home. The record consisted of date, duration of the

practice in minutes, feelings, thoughts, and any problems or difficulties that might have been encountered during the practice (Appendix A, page 179).

**2. Instruments for data collection.** The instruments used for data collection were (1) a Demographic Data Questionnaire; (2) the Functional Assessment of Chronic Illness Therapy (Spiritual) (FACIT-Sp) developed by Cella et al. (1996); (3) the Functional Assessment of Chronic Illness Therapy-Fatigue (FACIT-F) developed by Yellen et al. (1997). The descriptions of each instrument, validity, and reliability are presented below:

**2.1 Demographic Data Questionnaire (DDQ).** The DDQ consisted of demographics and medical history. Information on present and past health in treatment was also collected on the DDQ. This consisted of items on age, education, occupation, marital status, number of children, family income, family caregiver, health insurance, breast cancer staging, surgical treatment, chemotherapy treatment, chemotherapy cycle, and health problems.

**2.2 The Functional Assessment of Chronic Illness Therapy (Spiritual) (FACIT-Sp).** The measurement of spiritual well-being was measured by the FACIT-Sp which was developed by Cella et al. (1993). The FACIT-Sp is a 12-item scale that has 2 subscales (meaning/peace and faith); 8 items of meaning/peace (items 1, 2, 3, 4, 5, 6, 7, 8), and 4 items of faith (items 9, 10, 11, 12). Using Likert-type scales (absolutely not = 0, a bit = 1, slightly = 2, quite a lot = 3, very much = 4). A higher score indicates a higher level of spiritual well-being. Reliability was reported for the total FACIT-Sp and subscales. The internal consistency ranged from 0.81 to 0.88. The possible scores of the FACIT-Sp ranged from 0 - 48.

**2.3 FACIT- Fatigue (Functional Assessment of Chronic Illness Therapy - Fatigue).** Most of the intervention studies used the FACIT-F which was developed by Yellen et al. (1997) to treat cancer that is related with fatigue. The questionnaire consists of 13 item statements. Fatigue scores were in the range 0-52. Score < 30 indicated severe fatigue. It was already in the Indonesian version. The instrument showed reliability of alpha Cronbach .95 and the validity test .88.

### **Validity of the Intervention Program and the Instruments**

Five experts evaluated the validity of the Islamic Caring Mindfulness-based Program content. The five experts were: one expert in oncology nursing, one in psychiatric nursing, one in palliative care nursing, one expert in Islamic mindfulness and one expert in complementary therapy. The experts authenticated the accurateness, language, and cultural appropriateness of the ICMB program, The Khushu Prayer Questionnaire, Self-report of daily practice at home, the DDQ, the FACIT-Sp, The FACIT-F and reflection. The researcher then revised the Islamic Caring Mindfulness-based Program according to the comments and suggestions of the experts. In the booklet, the researcher started from the introduction using general terms in order to make it easy for participants to understand. Also, for DDQ, the researcher needed to add a specific measure, particularly for fatigue, namely Hb (hemoglobin level). Since the side effects of chemotherapy in the hematology system could suppress bone marrow function, this could contribute to anemia. Hence, low levels of Hb would trigger the symptom of fatigue (Hornerber, et al., 2012; Oh & Seo, 2011). Thus, a feasibility study was conducted to

ensure that the Islamic Caring Mindfulness-Program was possible in a clinical setting among four advanced breast cancer patients.

### **Reliability of the Instruments**

The reliability of the questionnaires has been reported in previous studies. The reliability of the FACIT-Sp Indonesian version in 20 advanced cancer patients was tested by examining the Cronbach's alpha coefficient yielding the values of .92 (Widyaningsih, 2013). Also, the Indonesian version of the FACIT-F was tested on 30 breast cancer patients undergoing chemotherapy and the Cronbach alpha value of .95 was obtained (Aisyah et al., 2014).

### **Data Collection Procedures**

The preparation phase and intervention phase data are part of the procedures for data collection and the process is described below:

**Preparation phase.** The preparation phase was as follows:

- 1) The researcher prepared herself by increasing her knowledge and skill involving praying correctly (*khushu*) and meditation by taking three short training courses (2-3 days) between October, 2015 to October, 2016, namely: (1) "Mode on Consciousness to Allah" training at the Solospiritual Islam, Solo, Central Java, Indonesia, (2) "*Salat Khushu* and Breath *Dzikr* Meditation" in Kuala Lumpur, Malaysia. In order to



have the skills of practice, the researcher regularly practices *khushu* prayer five times a day and breath *dzikr* meditation at least 60 minutes a day.

2) The researcher asked for permission from the Institutional Review Board (IRB) of the Nursing Faculty, Prince of Songkhla University, Thailand.

3) The researcher asked for permission from the director of Hasan Sadikin Hospital. After the permission was granted, the researcher met the head nurse of the chemotherapy unit ward, the Head of the Outpatient Installation, and the Department of Oncology. They were told of the study's purpose, benefits, investigation procedures, and time frame.

4) Three research assistants were trained to assess the results of the study. The procedure of using the questionnaires in order to collect data was explained by the researcher. The RAs have a Bachelor degree of Nursing and had experience as enumerators. The RAs were trained in one day. The training of the RAs was conducted one week before the implementation of the study. The researcher described the objectives, protocol, their role, and responsibility. For instance, the data collection of the pre-test, 1<sup>st</sup> post-test, 2<sup>nd</sup> post-test, and 3<sup>rd</sup> post-test was the research assistant's responsibility. The training also included recruitment of samples, data collection technique, such as, the procedures of collecting data at pre-test, 1<sup>st</sup> post-test, 2<sup>nd</sup> post-test and 3<sup>rd</sup> post-test, along with reviewing every instrument item, explaining how to use and to discuss the questionnaires, and when the research assistant use the phone call for reminding and discussing the program, also measuring the outcomes, namely spiritual well-being and fatigue on days three to four after receiving chemotherapy. They were also trained in how to clarify anything that may be unclear. The duty of the research

assistant was only to collect the data in the process of the study. They were not allowed to know the data source in order to avoid any prejudice.

5) The feasibility study was conducted with four breast cancer patients undergoing chemotherapy. The purpose was to fix the feasibility of the proposed study intervention and to identify any problems encountered in the data collection process, as well as to establish that the ICMB program guidelines were well understood by the patients. The results from the feasibility study showed that the four subjects in the feasibility study could understand the tools mentioned above. In this feasibility study, the advanced breast cancer patients were not included in the main study sample. The researcher used the intervention protocol that has been translated into the Indonesian language.

**Intervention phase.** The intervention process is described as follows. The researcher and research assistants (RAs) conducted the data collection in two groups. These were in the intervention group and the control group. In the preparation stage, before the program implementation, when informed consent was gained, the RAs took the baseline data (pre-test) using the DDQ, the FACIT-Sp, and the FACIT-F. The instruments were given to both groups. For the intervention group, in a separate room with the control group, the researcher taught one by one, and each in the intervention group could not meet each other. The researcher taught, coached and guided the Islamic Caring Mindfulness-Based program as well as encouraged the participants to perform the program, namely prayer and breath *dzikir* meditation, individually. The participants were given the booklet and MP3 for guidance. The intervention group received and followed

the program and practiced at the first meeting, at the third week, and the 6<sup>th</sup> week following the protocol of the program, and then they were assigned to practice in their home until finishing the program (6 weeks).

The mindfulness in prayer or the *khushu* prayer level was measured after prayer practice in the first meeting. It was to ensure that the participants in the intervention group could implement the practice correctly. While, the dependent variable outcomes were evaluated in accordance with the protocol, the data collection for the outcomes were conducted at four-time points; before the intervention (T1); after the intervention (on days 3-4) at week 1 (T2); at week 3/days 23-24 (T3); and at week 6/days 44-45 (T4).

### **Control Group**

In the control group, patients with advanced breast cancer and their families were provided the routine care. The researcher delivered information about the program and asked for signing informed consent. After the patients were randomized to the control group, the researcher met them to develop a relationship without the intervention. The routine care service was conducted by nursing staff, and other health care providers in the chemotherapy ward. The routine care consisted of providing information on the procedure of chemotherapy and giving information about common problems regarding side effects of chemotherapy. The nurses also had the role for administering chemotherapy medication and giving infusions. Whereas, the three research assistants collected the data using the DDQ, the FACIT-Sp, and the FACIT-F in the same way as the intervention group, at the baseline, on days 3-4 (Time-2), days 23-24 (Time-3), and

days 44-45 (Time-4). The researcher was convinced that no interaction between the intervention group and the control group during the treatment by providing a different room for both groups.

### **Ethical Consideration**

Before collecting any data, ethical approval was sought from the Institutional Review Board of the Faculty of Nursing, Prince of Songkhla University, Thailand (document number 2017 NSt-Qn 054, approved date: 15 January 2018). The researcher also asked for a letter of permission (ethical approval) from the Hasan Sadikin Hospital. After the researcher received the permission to conduct the study, the researcher asked for informed consent of the respondents before starting the study. Voluntary participation of the patients was sought by giving some information about informed consent. The patients were informed that all information collected was to be kept confidential by using codes instead of names. The written informed consent was obtained. Patients could ask any questions about the research and at any time could withdraw from the research. They also were informed that there was no known risk.

### **Data Analysis**

In this study, data analysis consisted of data management, testing of assumptions, and data analysis. The details are as follows.

**Data management.** The data management began when the researcher received the data from the respondents, in both the intervention and control groups. The researcher performed all data management procedures, including identification and correction of any errors, coding, data entry, and data cleaning. Missing data also was immediately checked for from each questionnaire. The data was checked for the completeness of the instrument. Coding of demographics and data information on the medical history of the advanced breast cancer patients was completed before entering the data into the computer program.

**Testing of assumptions.** In this study, there were three statistical testing analyses that used *t*-test, repeated measures ANOVA and one way ANOVA. The assumptions for these statistical testing analyses are as follows (Appendix D).

*1. t-test assumption.* There were five assumptions underlying the *t*-test (Munro, 2005).

1) *The sampling distribution is normally distributed.* Normality assumption was evaluated by the value of skewness divided by standard error (SE) of skewness, as well as kurtosis divided by the standard error of kurtosis for each group (intervention and control group) to see if the distribution has severe skewness and kurtosis. Both skewness and kurtosis were inspected for values 3.29 (West et al., 1995). In this study, 112 samples were recruited. The result reported that the skewness/SE of skewness and kurtosis/SE of kurtosis of all variables measured in the intervention group were in the normal range of normality data. For the control group, all variables had normality data distribution (see Appendix D, page 188). Therefore, these data met the assumption, and they were used for next analysis of *t*-test.

2) *Data are measured at least at the interval level.* In this study, all variables were measured as a ratio. Thus, this assumption was met.

3) *The data are independent for independent t-test (except for pair t-test).* In this study, independent t-test and dependent t-test were applied. For the independent t-test, the data was obtained from both groups independently. The control group consisted of 59 samples, and the intervention group consisted of 53 samples. Regarding the independent t-test (pair t-test), the independent variable consists of two categories, related groups or matched pairs. Related groups indicate that the same subjects are present in both groups. The data recruited from the group of time series (Time 1 = baseline, Time 2 = days 3-4, Time 3 = days 23-24, Time 4 = days 44-45). Thus, this assumption was met.

4) *There should be no significant outliers.* In order to examine the outliers, the box plot and the histogram in SPSS program were conducted. The results showed no outliers in the samples.

5) *Variances in these populations are roughly equal (homogeneity of variance).* Equality of variance was examined by inspecting the spread of observations in the Levene's test of equality of variance. The equality of variance in the sample was confirmed by Levene's test (homogeneity of variance) ( $p > .05$ ). The homogeneity of variance in this study was varied. Some did not meet the assumption (Appendix D, Table 10). Table 10 shows that only four variables met the assumption for Levene's test for equality of variances. Therefore, to solve this problem, the researcher followed the statistical correction. For the variable that did not meet the assumption, the correction was performed by the interpretation of the results from equal variances not an assumed row.

2. *Repeated measures ANOVA assumption.* This was the variable that should be normally distributed and have homogeneity variance, compound symmetry, and correlation (Munro, 2005).

1) *The sampling distribution is normally distributed.* In this study, the procedure of examining for data distribution of all variables was conducted. The procedure and the results of analyzing for data distribution were similar to the ones shown in the previous mentioned t-test (Appendix D, Table 9) and the assumption was met. In addition, the assumption of normal distribution for the repeated measures ANOVA and t-test were similar.

2) *Homogeneity variance.* The equality of variance in the sample was confirmed by Levene's test (homogeneity of variance) ( $p > .05$ ). In this study, the homogeneity of variance was varied. Some did not meet the assumption. Table 10 shows that all of the variables met the assumption for Levene's test for equality of variances.

3) *Compound symmetry (sphericity), and correlation.* To examine the variance of the data, Mauchly's test of sphericity was conducted. The result of the sphericity reported that all of the variables did not meet the assumption for the test of sphericity for equality of variances (Appendix D, Table 11). Therefore, the researcher used the correction to interpret the results from the Epsilon Huynh-Feldt method.

4) *The data are independent.* In this study, the data was recruited from two groups independently; the control and intervention groups. The control group consisted of 59 samples, and the intervention consisted of 53 samples. Hence, the assumption was met.

5) *Data are measured at least at the interval level.* In this study, all variables were measured as a ratio. Thus, this assumption was met.

## **Data analysis**

**1. Descriptive analysis.** The demographic and socioeconomic information and the medical history of the advanced breast cancer patients were analyzed by the descriptive statistics. Age and hemoglobin level were analyzed for the mean and standard deviation. While the other data, such as education, occupation, marital status, family income, family caregiver, health insurance, breast cancer staging, surgical treatment, chemotherapy treatment, chemotherapy cycle, menopause and comorbidities were presented by frequency and percentage.

**2. Inferential data analysis.** This study has four research hypotheses as previous mentioned in Chapter 1 (p. 8). The details of the data analysis are as follows.

1) *The independent t-test.* This method was used to compare the differences of spiritual well-being and fatigue mean scores that were measured at Time-1, Time-2, Time-3, and Time-4 between the patients who received the Islamic Caring Mindfulness-based program (the intervention group) and the patients who received the routine care (the control group) (Hypotheses 1 and 2).

2) *Repeated Measures ANOVA (RM-ANOVA).* This method was used to test (1) the distinctions of the mean scores of spiritual well-being, and fatigue between the control and intervention groups, (2) the changes in the mean scores of spiritual well-being and fatigue over four time points (Time-1 = baseline, Time-2 = days 3-4, Time-3 = days



23-24 and Time-4 = days 44-45) within the control and intervention groups, and (3) the interaction between treatment and time (Hypotheses 3 and 4).

3) *One-way ANOVA*. This method was used to compare overall differences between spiritual well-being and fatigue mean scores that were measured at Time-1, Time-2, Time-3 and Time-4 within a group (either the control or intervention group). If the overall differences between the mean scores of spiritual well-being and fatigue measured at Time-1, Time-2, Time-3, and Time-4 within each group showed significant differences, a post hoc analysis was further performed. Post hoc test was used to compare four pairwise comparisons of spiritual well-being, and fatigue among Time-1, Time-2, Time-3, and Time-4.

### **Strategies to Minimize Threats to Internal Validity**

There are some approaches to minimize threats to internal validity. To overcome the anticipated threats, the researcher observed the following:

**History.** ‘History’ is a threat that may result from an observed effect due to an event that occurs between the pre-test and the post-test if this event is not a research interest treatment. For minimizing potential threats, the researcher took measures, for instance, in a single setting, the researcher collected data to maintain the same care situation during the study. To ensure that each participant had the same historical effect, randomization of the assignment was applied.

**Maturation.** This is a threat that may result from an experimental effect due to the respondent growing stronger, wiser, older, and more experienced and occurs in

between pre-test and post-test. This maturation is not the treatment of interest in research. There was a parallel control group to overcome this threat, so that the maturation effect was occupied equally into account for both groups.

**Testing.** The effects of one test may have a direct effect on the performance of the test that follows. The pretest affects the post-test directly. It usually occurs through practice or memory effects. In this study, the results of spiritual well-being and fatigue in chemotherapy were measured four times, on day 1 (baseline), on days 3-4, on days 23-24, and days 44-45. Therefore, the long period between the interval measurement (three weeks) meant the participants could avoid recalling their previous answers; the same condition happened in both groups, the intervention group and control group.

**Statistical regression.** The threat came from the effect of the participants being moved to the intervention group because of their low or high scores in the pre-test and/or post-test. In order to minimize this problem, this study placed the participants in a group at random.

**Selection bias.** This is a threat when an effect can be caused by the difference between the types of people in the intervention group and the control group. This threat was avoided through the random sampling process. Furthermore, a chi-square test, and independent t-test were used in both groups in order to confirm the homogeneity of the background characteristics (Table 4-1), the mean scores of spiritual well-being, and fatigue at baseline (Table 4-3, 4-4).

**Mortality.** Mortality is also known as attrition, dropouts, or withdrawals. It is difficult if there is a differential loss of subjects from comparative groups following randomization, resulting in unfair groups at the end of the study. In order to overcome

this threat, the researcher used attrition rate. The anticipation of the attrition rate that was used in this study was 20%. So, the sample remained adequate despite missing samples. Finally, the present study revealed eight participants (6.67%) withdrew in both groups (five participants in the control group and three participants in the intervention group).

**Diffusion or Imitation of Treatment.** Respondents in the control group can gather information from the trial group when treatments involve information programs and the different intervention (and control) groups are able to have contact with each other. Therefore, the intervention group becomes invalid because there are no planned differences between the control and intervention groups. In order to overcome this threat, the researcher separated the room for the intervention and control groups. Also, the intervention group did not know each other while they came to chemotherapy treatment.

**Compensatory Rivalry by Respondents Receiving Less Desirable Treatment.** This is the tendency of a control group to take the experimental situation as a challenge and to put more effort into it than they would otherwise; they try to overcome those in the experimental group. It means that the control group would try harder in a competitive spirit against the experimental group. The researcher used methods for controlling or eliminating this issue, such as, avoided interaction between the groups, and avoided giving one group knowledge of the other's presence, as well as avoided implying any sense of competition.

**Resentful Demoralization of Respondents Receiving Less Desirable Treatments.** This occurs when the control group's performance decreases because the control group sees the intervention group getting more attention, benefits, or special treatment. For example, the control group may have had enthusiasm at the early stage

when the prospect of taking part in a special intervention was announced. Their hopes may have been diminished since their fate was being assigned to the condition of non-treatment control, resulting in a degraded performance. The researcher used strategies for controlling or eliminating this, namely, comprehensive training for all involved, and careful monitoring of the study. Also, she provided compensation and that did not interact with treatment; and isolated the treatment and control group by using different rooms.

## CHAPTER 4

### RESULTS AND DISCUSSION

This chapter comprises of the results and discussion. The results consisted of the demographic characteristics of patients with breast cancer undergoing chemotherapy. In addition, the effects of the Islamic caring mindfulness-based program (ICMB) on spiritual well-being and fatigue are presented. Discussion was focused on the major findings of the study and the hypothesis of the study. The purposes of the study was to test the effects of the Islamic caring mindfulness-based program on spiritual well-being and fatigue among Indonesian women with advanced breast cancer.

One hundred and twenty breast cancer patients were recruited in this study. Before performing data analysis, the data were tested for assumptions both *t*-test and ANOVA. The data were tested for normality distribution, homogeneity, and sphericity. All assumptions were adjusted and met. The final sample was 112 samples that divided into control group ( $n = 59$ ) and intervention group ( $n = 53$ ).

#### Results

##### Section 1: Demographic characteristics of the participants

In the intervention group, the average age was 47.51 ( $SD = 7.74$ ) years, minimum age was 30, and maximum age was 64 years. More than half of the participants had an educational background of primary school level (50.92%). More than half of the

participants were unemployed (66.0%). The majority of the participants were married (77.4%), and had either no children, or not more than two children (64.2%). The majority of the participants had an adequate income (84.9%), even though, more than half of them were unemployed (66%). More than half of the participants were taken care of by their spouses (60.4%). All of the participants had government health insurance namely BPJS (Indonesia's Health Insurance Scheme). Regarding medical history, more than half of the participants were diagnosed with breast cancer staging on IIIb (69.8%). More than half of them did not receive surgical treatment (58.5%). Medications that the participants received were Fluoroacil/ Doxorubicin/ Cyclophosphamide (FAC) (81.1%), Docetaxel/ Doxorubicin/ Cyclophosphamide (TAC) (11.3%), and Doxorubicin/ Cyclophosphamide followed by Paclitaxel (AC + Paclitaxel) (7.5%). Almost half of the participants had had their first cycle of chemotherapy when they entered the program (41.5%), most of them had no post-menopausal syndrome and comorbidities (69.8% and 92.5%) respectively, with a mean hemoglobin level of 12.24 ( $SD = 1.02$ ).

The ages of the control group ranged from 27 to 63 years with a mean age of 46.83 years old ( $SD = 8.60$ ). The participants in the control group were married (81.4%), finished primary school (59.32%) and high school (33.9%), and were unemployed (66.1%). More than half of the participants had no more than two children (52.5%), had adequate family income (78.0%), and had a spouse as a family caregiver (64.4%). All of them had BPJS insurance (100%).

For medical history, the participants in the control group were diagnosed with breast cancer in stage IIIa (39.0%), stage IIIb (52.5%) and reported no surgical treatment (61%). Medications that the participants used were FAC (79.7%),

Docetaxel/Doxorubicin/Cyclophosphamide (11.9%), and Doxorubicin/Cyclophosphamide followed by Paclitaxel (8.5%). Most of the participants were receiving their second cycle of chemotherapy at baseline assessment (39.0%), had no post-menopausal syndrome and comorbidities (69.5% and 94.9%) respectively, with a mean hemoglobin level of 11.94 ( $SD = 1.33$ ).

Table 4-1

*Frequency, Percentage, Chi-square, and T-test Results of Advanced Breast Cancer Patients in the Control and Intervention Groups Identified by Demographic Data (N = 112)*

Variable	Intervention Group (n = 53)		Control Group (n = 59)		(t/ $\chi^2$ )	P
	f	%	F	%		
Age(M/SD) (range)	47.51(7.74)	(30-64)	46.83(8.60)	(27-63)	-.44 <sup>a</sup>	.66
Education						
Primary	27	50.9	35	59.32	2.12	.55 <sup>c</sup>
High school	21	39.6	20	33.90		
University	4	7.5	4	6.8		
Occupation						
Unemployed	35	66.0	39	66.1	.00	.99 <sup>b</sup>
Employed	18	34.0	20	33.9		
Marital status						
Single	3	5.7	1	1.7	1.29	.53 <sup>c</sup>
Married	41	77.4	48	81.4		
Widow	9	17.0	10	16.9		
Number of children						
0-2	34	64.2	31	52.5	1.55	.21 <sup>b</sup>
3-5	19	35.8	28	47.5		
Family income						
Adequate	45	84.9	46	78.0	.88	.35 <sup>b</sup>
Inadequate	8	15.1	13	22.0		

Table 4-1

*Frequency, Percentage, Chi-square, and T-test Results of Advanced Breast Cancer Patients in the Control and Intervention Groups Identified by Demographic Data (N = 112) (Continued)*

Variable	Intervention Group (n = 53)		Control Group (n = 59)		(t/ $\chi^2$ )	p
	f	%	F	%		
Family care giver relationship						
Spouse	32	60.4	38	64.4	2.40	.49 <sup>c</sup>
Child	15	28.3	13	22.0		
Parent	1	1.9	0	0		
Others	5	9.4	8	13.6		
Health insurance						
BPJS	53	100	59	100	-	-

<sup>a</sup>= Independent t-test, <sup>b</sup>=  $X^2$ , <sup>c</sup> = Likelihood ratio

Table 4-2

*Frequencies and Percentages of Medical History of the Intervention Group and the Control Group (N = 112)*

Variable	Intervention Group (n = 53)		Control Group (n = 59)		Statistics (t/ $\chi^2$ )	p
	f	%	f	%		
Hb(M/SD)(range)	12.24 (1.02)	10.40- 14.40	11.94 (1.33)	9.00- 14.70	-1.35 <sup>a</sup>	.18
Breast cancer stage						
IIIa	13	24.5	23	39.0	3.50	.17 <sup>c</sup>
IIIb	37	69.8	31	52.5		
IIIc	3	5.7	5	4.5		



Table 4-2

*Frequencies and Percentages of Medical History of the Intervention Group and the Control**Group (N = 112) (Continued)*

Variable	Intervention Group (n = 53)		Control Group (n = 59)		Statistics (t/ $\chi^2$ )	p
	f	%	f	%		
<b>Surgical treatment</b>						
No	31	58.5	36	61	.07	.79 <sup>b</sup>
Yes	22	41.5	23	39.0		
<b>Chemotherapy treatment</b>						
1 FAC	43	81.1	47	79.7	.05	.98 <sup>c</sup>
2 TAC	6	11.3	7	11.9		
3 AC+paclitaxel	4	7.5	5	8.5		
<b>Chemotherapy cycle at baseline</b>						
1	22	41.5	20	33.9	3.54	.32 <sup>c</sup>
2	12	22.6	23	39.0		
3	9	17.0	7	11.9		
4	10	18.9	9	15.3		
<b>Menopause</b>						
Yes	16	30.2	18	30.5	.00	.97 <sup>b</sup>
Not yet	37	69.8	41	69.5		
<b>Comorbidities</b>						
Yes	4	7.5	3	5.1	.29	.59 <sup>d</sup>
No	49	92.5	56	94.9		

Note: <sup>a</sup> = Independent t-test, <sup>b</sup> =  $X^2$ , <sup>c</sup> = Likelihood ratio, <sup>d</sup> = Fisher's exact test

Fluoroacil/doxorubicin/cyclophosphamide (FAC), Docetaxel/doxorubicin/cyclophosphamide (TAC), doxorubicin/cyclophosphamide/ followed by paclitaxel (AC + Paclitaxel)

## Section 2: Effect of the Islamic Caring Mindfulness-based Program

**Hypothesis 1:** The mean scores of the intervention group on days 2-3 (Time-2), on days 23-24 (Time-3), and days 44-45 (Time-4) will be higher than those of the control group.

Before performing the data analysis, all the assumptions of independent *t*-test were tested and met. Thus, homogeneity of variance of spiritual well-being was measured at all four times presented by Levene's test for equality of variance was significant ( $p = .002$ ,  $p = .000$ ,  $p = .000$ ,  $p = .000$ ) respectively. Thus, the result was interpreted from equal variances not assumed.

In the control group, the mean scores of spiritual well-being on day 1 (baseline/Time-1), on days 2-3 (Time-2), on days 23-24 (Time-3), and days 44-45 (Time-4) after receiving the program were 36.86 ( $SD = 5.57$ ), 35.68 ( $SD = 4.73$ ), 35.46 ( $SD = 5.24$ ) and 33.80 ( $SD = 6.03$ ). For the intervention group, results showed an increase in spiritual well-being on the Time-2, Time-3, and Time-4. The mean scores of spiritual well-being for this group were 36.60 ( $SD = 3.59$ ), 39.11 ( $SD = 2.78$ ), 41.96 ( $SD = 2.24$ ), and 44.66 ( $SD = 2.20$ ) (see Table 4.3, Figure 6).

In addition, the results showed that there were no statistical significant differences in the mean scores of spiritual well-being at Baseline (Time-1) between the intervention and control group ( $t = -.297$ ,  $p = .767$ ). The mean score of spiritual well-being in the intervention group on days 3-4 (Time-2), on days 23-24 (Time-3), and days 44-45 (Time-4) was significantly higher than that of the control group ( $t = -4.74$ ,  $p = .000$ ), ( $t = -8.70$ ,  $p = .000$ ), ( $t = -12.91$ ,  $p = .000$ ) respectively. These results supported Hypothesis 1.

Table 4-3

*Comparison of the Spiritual Well-being Scores in the Intervention and Control Groups**Classified by Time Point (N = 112)*

Time	Group		<i>t</i>	<i>p</i>
	Intervention ( <i>n</i> = 53)	Control ( <i>n</i> = 59)		
	<i>Mean(SD)</i>	<i>Mean(SD)</i>		
Time-1 (Day 1: Baseline)	36.60(3.59)	36.86(5.57)	-.297	.767
Time-2 (Days 3-4)	39.11(2.78)	35.68(4.73)	4.74	.000*
Time-3 (Days 23-24)	41.96(2.24)	35.46(5.20)	8.70	.000*
Time-4 (Days 44-45)	44.66(2.20)	33.80(6.03)	12.91	.000*

Note: \* $p < .001$ 

Figure 6 illustrates each time point between the intervention group and the control group for the mean scores of spiritual well-being. A repeated measure of ANOVA was used to examine the differences in spiritual well-being scores over time between the intervention group and control groups. There were statistically significant differences in the changes of the mean scores of spiritual well-being over the four time points (Time-1, Time-2, Time-3, and Time-4) ( $F = 11.83, p = .000$ ).

These results may reflect that the ICMB program implemented over days 3-4, 23-24, and days 44-45 was significantly effective in increasing spiritual well-being among Indonesian women with advanced breast cancer undergoing chemotherapy. T-test was verified four times to compare spiritual well-being between the intervention and the control groups (see Figure 6).

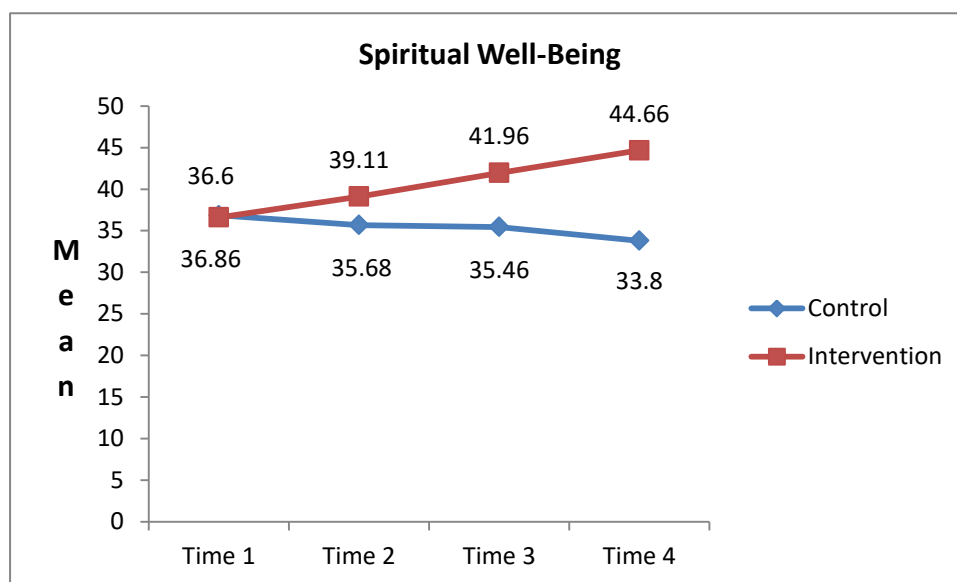


Figure 6. The differences of mean scores on spiritual well-being between the control group and intervention groups at the baseline (Time-1), days 3-4 (Time-2), days 23-24 (Time-3), and days 44-45 (Time-4).

**Hypothesis 2:** The mean scores of fatigue of the intervention group after receiving the program on days 2-3 (Time-2), on days 23-24 (Time-3), and day 44-45 (Time-4) will be higher than those of the control group.

Before performing the data analysis, all assumptions of independent *t*-test were tested and met. The result will be presented bellows:

The mean score of fatigue in the control group-revealed at the day-1 (baseline), on days 2-3 (Time-2), on days 23-24 (Time-3), and days 44-45 (Time-4) were 33.86 (*SD* = 8.58), 30.17 (*SD* = 8.81), 29.34 (*SD* = 9.30), 28.68 (*SD* = 9.22). For the intervention group, the mean score of fatigue presented a dramatically decrease from Time-1 (baseline) to Time-2, and moderately increase to Time-3 and Time-4. The mean scores

were 36.45 ( $SD = 8.76$ ), 32.26 ( $SD = 7.76$ ), 34.92 ( $SD = 8.18$ ), 37.89 ( $SD = 7.38$ ). There were significant differences in the mean scores of fatigue between the intervention and control group on days 23-24 (Time-3) ( $t = -3.36, p = .001$ ) and the days 44-45 (Time-4) ( $t = -5.79, p = .000$ ).

Furthermore, the results revealed that the mean scores of fatigue measured at baseline (Time-1) between the intervention and control group no statistically significant differences ( $t = -1.58, p > .05$ ). Moreover, the mean score of fatigue on days 3-4 (Time-2) was not statistically significantly different between the intervention group and the control group ( $t = -1.33, p > .05$ ). Whereas, on days 23-24 (Time-3) and days 44-45 (Time-4) the mean score of fatigue in the intervention group was statistically higher compared to the control group ( $t = -3.36, p = .001$ ) and ( $t = -5.79, p = .000$ ) (see Table 4-4, Figure 7). These results partially supported Hypothesis 4.

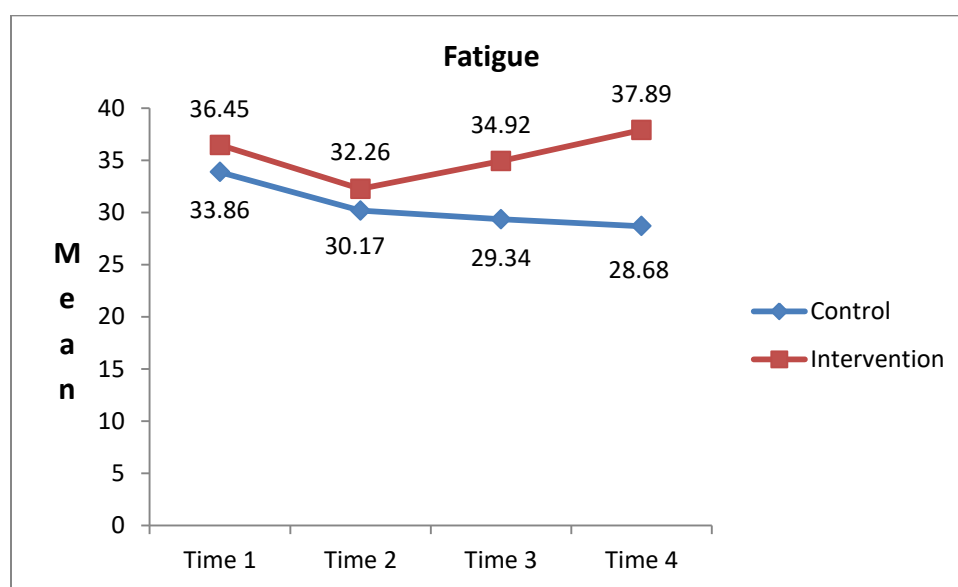
Table 4-4

*Comparison of the Fatigue Scores in the Intervention and Control Groups Classified by Time Point (N = 112)*

Time	Group		<i>t</i>	<i>p</i>
	Intervention ( <i>n</i> = 53)	Control ( <i>n</i> = 59)		
	<i>Mean(SD)</i>	<i>Mean(SD)</i>		
Time-1 (Day 1: Baseline)	36.45(8.76)	33.86(8.58)	-1.58	.117
Time-2 (Days 3-4)	32.26(7.76)	30.17(8.81)	-1.33	.187
Time-3 (Days 23-24)	34.92(8.18)	29.34(9.30)	-3.36	.001*
Time-4 (Days 44-45)	37.89(7.38)	28.68(9.22)	-5.79	.000**

Note. \* $p < .05$ , \*\* $p < .001$

Figure 7 illustrates, each time point between the intervention and control group for the mean scores of fatigue. A repeated measure was applied to check the differences between the intervention group and the control group in fatigue over time. The results showed that there was a significant difference in fatigue scores by the time ( $p < .001$ ). These results may confirm that the program implemented over the days 23-24 and days 44-45 significant effectiveness the ICMB program in Indonesian women with advanced breast cancer undergoing chemotherapy. Thus, this finding partially supported hypothesis 2.



*Figure 7.* The differences of the mean scores of fatigue between the control and the intervention groups at baseline (Time-1), days 3-4 (Time-2), on days 23-24 (Time-3), and days 44-45 (Time-4)

**Hypothesis 3:** The mean scores of spiritual well-being of the intervention group after receiving the program on days 2-3 (Time-2), on days 23-24 (Time-3), and days 44-45 (Time-4) will be higher than at baseline.

The spiritual well-being mean scores' between the intervention and the control groups were examined using the repeated measures ANOVA. The results show that there was a significant difference in spiritual well-being scores in the time ( $F = 11.83, p < .001$ ). Another point is that, the interaction between group and time had significant differences ( $F = 49.56, p < .001$ ) (see Table 4 - 5).

This result proves that the ICMB program provoked a potent improvement in the level of spiritual well-being compared to before participating in the program. For checking the differences of the variables between the intervention group and the control groups over time were applied the repeated measures ANOVA. The findings showed that there was a significant difference by group ( $F = 76.30, p = .000$ ) (see Table 4 - 5). The findings of the present study show that there was a difference in the spiritual well-being scores in Indonesian women with advanced breast cancer undergoing chemotherapy who participated in the program and those who received the usual care after participating the program on days 3-4 (Time-2), days 23-24 (Time-3), and days 44-45 (Time-4). Advanced breast cancer in the intervention group indicated a significant difference in the enhancement in their spiritual well-being on the days 3-4 (Time-2), days 23-24 (Time-3), and days 44-45 (Time-4) when compared to those in the control group. In addition, spiritual well-being scores between the intervention and control group had a significant difference. For that reason, hypothesis 3 was supported by this study.

Table 4-5

*Mean Score Differences Across Time of Spiritual Well-being Between and Within Groups**(N = 112)*

<i>Source</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Between group					
Within groups (error)	4246.86	110	38.61		
Group	2945.63	1	2945.63	76.30	.000*
Within group					
Time x within group (error)	4132.95	294.72	14.02		
Time	444.47	2.68	165.89	11.83	.000*
Group x time	1862.15	2.68	695.02	49.56	.000*

Note: \* $p < .001$ 

Furthermore, post-hoc time pairwise comparisons provided the scores changed significantly compared to day-1 ( $p < .05$ ) on the spiritual well-being in each of measurement over time after participating in the program. However, there was a significantly change in the spiritual well-being scores of the control group across from Time-1 to Time-4 only (see Table 4 - 6).

Table 4-6

*Pairwise Comparisons of the Spiritual Well-being Scores Across the Four Time Periods**in Both the Intervention Group and the Control Group (N = 112)*

<i>Spiritual well-being scores / Time point</i>	<i>Control group / Mean differences</i>	<i>p</i>	<i>Intervention group / Mean difference</i>	<i>p</i>
T1 – T2	1.19	.702	-2.49	.001*
T1 – T3	1.41	.575	-5.32	.000**
T1 – T4	3.07	.025*	-8.04	.000**
T2 – T3	.22	.997	-2.83	.000**
T2 – T4	1.88	.315	-5.55	.000**
T3 – T4	.16	.429	-2.72	.000**

Note. \*\* $p < .001$ , \* $p < .05$



**Hypothesis 4:** The mean scores of fatigue of the intervention group after receiving the program on days 2-3 (Time-2), on days 23-24 (Time-3), and days 44-45 (Time-4) will be higher than at baseline.

Before testing hypothesis 4, the repeated measures ANOVA was conducted to identify 1) the difference in the mean scores of fatigue between the control and intervention groups, 2) the changes in mean scores of fatigue over four time points (Time-1 = Baseline, Time-2 = days 3-4, Time-3 = days 23-24, Time-4 = days 44-45) within the control and intervention groups, and 3) the interaction between treatment and time. The data were tested and not all the assumptions of repeated measures ANOVA were met, because the sphericity was not assumed ( $p = .000$ ). Thus, the results were interpreted using Huynh-Feldt correction (Leech et al., 2005).

The repeated measures ANOVA revealed that the mean scores of fatigue between the control and intervention groups had statistically significant differences ( $F = 16.16, p = .000$ ). Similarly, when using the repeated measures ANOVA with a Huynh-Feldt correction, the changes in mean scores of fatigue over the four time points (Time-1, Time-2, and Time-3, and Time-4) had statistically significant differences ( $F = 7.53, p = .000$ ). In addition, the interaction between treatment and time was significant different ( $F = 7.00, p = .000$ ) (Table 4-7). In the present study, there was a significant difference in the fatigue scores in Indonesian women with advanced breast cancer who participated in the program and those who received usual care after finishing the program and at Time-2, Time-3, and Time-4. Therefore, hypothesis 4 was supported in this study.

Table 4-7

*Mean Score Differences Across Time of Fatigue Between and Within Groups (N = 112)*

<i>Source</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Between group					
Within groups (error)	18028.01	110	163.89		
Group	2647.98	1	2647.98	16.16	.000
Within group					
Time x within group (error)	14139.76	295.79	47.80		
Time	967.35	2.69	359.74	7.53	.000
Group x time	900.28	2.69	334.80	7.00	.000

Note. \*\* $p < .001$

Moreover, the time pairwise comparisons of post-hoc provided the scores of fatigue changed no significantly compare to Time-1 (baseline/day-1) ( $p > .05$ ) in each of measurement over time after participating in the program. Whereas, the fatigue score indicated an increase significant difference from Time-2 to Time-4 ( $p < .05$ ) (see Table 4 - 8)

Table 4-8

*Pairwise Comparisons of the Fatigue Scores Across the Four Time Periods in Both the Intervention Group and the Control Group (N = 112)*

Spiritual well-being scores / Time point	Control group / Mean differences	<i>p</i>	Intervention group / Mean difference	<i>p</i>
T1 – T2	3.695	.176	4.17	.071
T1 – T3	4.525	.061	1.53	.811
T1 – T4	5.186	.022*	-1.43	.839
T2 – T3	.831	.969	-2.64	.415
T2 – T4	1.492	.846	-5.60	.006*
T3 – T4	.661	.984	-2.92	.311

Note. \* $p < .05$

## **Discussion**

The recent findings of the study were discussed and compared to the previous studies, in line with the research hypothesis as well. The effects of the Islamic Caring Mindfulness-based Program (ICMB) on the spiritual well-being and fatigue are illustrated below.

### **Hypothesis 1 and hypothesis 3**

Hypothesis 1 identified that the mean scores of spiritual well-being of the intervention group on days 2-3 (Time-2), on days 23-24 (Time-3), and days 44-45 (Time-4) were higher than those of the control group. Hypothesis 3 in the current study stated that the mean scores of spiritual well-being of the intervention group after receiving the program on days 2-3 (Time-2), on days 23-24 (Time-3), and days 44-45 (Time-4) were higher than at baseline.

According to the findings, the present results revealed that the mean scores of spiritual well-being of the patients in the intervention group were higher than those of the patients in the control group ( $p < .001$ ). While, at baseline data, the mean score of the spiritual well-being in both the intervention and control groups showed no significant difference (Table 4-3, Figure 6). The finding might be explained by the mean scores of the spiritual well-being, which gradually increased after receiving the intervention program (ICMB) from baseline to Time-2 (days 3-4), Time-3 (days 23-24), and Time-4 (days 44-45) in the intervention group. There was a significant difference among four pairwise comparisons in the intervention group between the mean scores on baseline to Time-2, Time-3 and Time-4 (Table 4-6) as well as the mean scores of spiritual well-being

on days 3-4 (Time-2), days 23-24 (Time-3), and days 44-45 (Time-4), were significant different between the intervention and control groups (Table 4-3). Thus, these results confirmed that ICMB had a significant effect on improving the spiritual well-being of the advanced breast cancer patient's undergone chemotherapy.

The data also would be supported by the findings of the present study; the spiritual well-being in the intervention group was better than the control group. The findings in the present study are in line with several studies which reported a statistically significant increase in spiritual well-being scores from pre- to post- spiritual group therapy. For instance, Jafari, Farajzdegan, Zamani, et al. (2013) found a statistically significant increase in spiritual well-being scores ( $p < .001$ ) in a homogeneous sample of 34 breast cancer patients undergoing radiation therapy who completed a six-week spiritual group therapy when compared with the baseline. Similar to Rahmani and Talepasand (2015) who reported a statistically significant increase in spiritual well-being scores among 12 cancer patients who participated in an eight-week mindfulness skill program, including meditation, relaxation and hatha yoga, when compared to 12 controls. In addition, a study of a twelve-week spiritual group therapy with 12 breast cancer patients reported a statistically significant increase in spiritual well-being scores from pre- to post- intervention (Zamaniyan et al., 2016). Furthermore, Fallah et al. (2011) reported a statistically significant increase in spiritual well-being scores from pre- to post in an Islamic perspective, spiritual intervention among 30 breast cancer patients stage I-III who completed an eight-week program.

Similarly, the finding in the present study is almost similar with Hosseini et al. (2016) who reported a statistically significant increase in spiritual well-being scores of 28

patients with breast cancer after completing the ten-week spiritual intervention backed by *Quran* and Islam standards, when compared to 29 controls. However, in the current study the duration of the intervention program was shorter (6 weeks), as well as used over time period, in which the spiritual well-being outcome was measured since days 3-4 (Time-2), days 23-24 (Time-3), and days 44-45 (Time-4). The result revealed that a significant difference in the enhancement in the spiritual well-being on days 3-4 (Time-2), days 23-24 (Time-3), and days 44-45 (Time-4) when compared to those in the control group.

### **Hypothesis 2 and hypothesis 4**

Hypothesis 2 identified that the mean scores of fatigue of the intervention group after receiving the program on days 2-3 (Time-2), on days 23-24 (Time-3), and day 44-45 (Time-4) were higher than those of the control group. Moreover, hypothesis 4 of the study is the mean scores of fatigue of the intervention group after receiving the program on days 2-3 (Time-2), on days 23-24 (Time-3), and days 44-45 (Time-4) were higher than at baseline.

The present study measured the fatigue level of the participants used the FACIT-Fatigue scale. A higher score indicated a lower level of fatigue. Based on the findings, the overall fatigue levels showed statistically significant differences between the intervention and the control groups ( $p < .05$ ). The result showed that the fatigue levels of both intervention and control group dramatically increased in Time-2 like other studies (Sura et al., 2006; Bataglini et al., 2008) (Figure 7); but the fatigue level was significantly decreased across time 2 points (Time-3 and Time-4) for the intervention group (Table 4-4, Figure 7). This result was congruent with the results in the earlier literature reported

that breast cancer patients receiving chemotherapy experiencing significantly higher fatigue on day-3 (Sura et al., 2006; Bataglini et al., 2008). Similarly, the fatigue was more severe in the first cycle (Byar et al., 2006; Berger et al., 2009; Nurhasanah, 2014). These earlier study results were also supported by the data of the present study participants from both the intervention and control groups; where, most of them were receiving chemotherapy for the first cycle (41.5% and 33.9%) respectively. However, in the present study there was no significant difference of the fatigue scores between the groups at Time-2. Possible reasons are firstly, mindfulness practice (i.e., ICMB program) may not be effective for a higher fatigue level. Secondly, mindfulness practice in the present study requires time to earn the expected benefits from the practice (> days 3-4). From the result, can be seen that after Time-2 of the intervention group, the fatigue level gradually decreased at Time-3 and Time-4. Even though, at Time-3 and Time-4, the fatigue scores were measured on days 3-4 after the second cycle of the study (cycle  $n + 2$ ); the fatigue level was very close to the baseline ( $M = 34.92$ ; Figure 7).

The results also show that there was statistical difference in fatigue scores between the intervention and the control group at Time-3 ( $p = .001$ ) and Time-4 ( $p = .000$ ). The scores for fatigue were higher among the Indonesian women with advanced breast cancer undergoing chemotherapy after participating the ICMB program (Table 4-4) as demonstrated, the line graph (Figure 7) that showed moderately increased mean scores of fatigue on days 23-24 (Time-3), and days 44-45 (Time-4). Even though, at the baseline (Time-1), and days 3-4 (Time-2) the mean scores of fatigue both in the intervention and control groups showed no significant differences (Table 4-4). However, there were statistically significant differences between one pairwise comparisons of

fatigue in the intervention group that the mean scores of fatigue were significantly increased from Time-2 (days 3-4) to Time-4 (days 44-45) (Table 4-8) ( $p = .006$ ). This indicates that the fatigue level of the intervention group is significantly lower than that of the control group as a consequence of the intervention and for the accumulative effects of the ICMB program. While literature also reported that, less fatigue is found in later cycle of chemotherapies. This may also contribute to the reduction of fatigue at Time-3 of the intervention group. Oppositely, in the control group the fatigue level continuously worsen due to the accumulative side effect of chemotherapy treatments. Thus, it confirmed that the ICMB program could reduce fatigue among the breast cancer patients undergoing chemotherapy.

For the fatigue outcome, four studies found similar findings as in the present study. Jafari, Zamani, Farajzdegan, et al. (2013) reported a statistically significant difference in fatigue scores in the intervention group which experienced spiritual therapy when compared to the control group. According to Jafari, Zamani, Farajzdegan, et al. (2013), they found the intervention group had statistically significant lower scores than the control group ( $p < .001$ ), which means lower fatigue, after completing the six-week spiritual group therapy. Likewise, Kim et al. (2013) reported a statistically significant decrease in fatigue scores ( $p < .030$ ) in a sample of 51 breast cancer patients in stage I-III in a Cancer Center after having received a total of 12 sessions of meditation therapy for their 6-week radiation therapy period. This study suggested that the practice of meditation led to a reduction in fatigue, which in turn led to stress reduction and improved quality of life. In another study, Aisyah et al. (2015) measured fatigue in 30

breast cancer patients undergoing chemotherapy and reported that practicing Islamic prayer benefited in reducing cancer related fatigue ( $p = .004$ ).

Thus, these demographic factors do not significantly difference for both in the control and intervention group. Since most samples of both the intervention and control groups were married (77.4%, 81.4%) and taken care by spouse (60.4%, 64.4%), this can help promote spiritual well-being and lower fatigue of both groups on a whole.

The foremost arguments for the discoveries of this study might come from the structure and specification of the program being specially composed of Islamic principles, which could simply enhance the spiritual well-being and reduce fatigue of women with advanced breast cancer undergoing chemotherapy. The ICMB program was developed based on caring incorporating prayer, and breath *dzikir* meditation as effective physical-spiritual care to be the main path for enhancing the spiritual well-being and reducing fatigue. Since the spiritual well-being is contributed by prayer, breath *dzikir* meditation and caring action.

Prayer is an act of worshiping with physical body movements as well as a silent Quranic recitation, involving supplication and faith, in turn, enhancing the level of calmness, connection to God, as well as cultivating mindfulness (Sangkan, 2006; Alameen, 2016). In addition, breath *dzikir* meditation can improve mindfulness through faith and resignation, also increasing the condition of relaxation. Therefore, increasing the consciousness of God, serenity, peace of mind, and calmness. Another, activities of prayer can improve adaptation holistically because there are energy conservation techniques in its implementation (Mock et al., 2007). The concept of energy conservation



occurs during prayer activities and includes increasing energy, structural, personal and social integration (Levine, 1973 cited in Mock et al., 2007).

Furthermore, Islamic caring brought good health outcomes, through not only providing the patients' education related to disease and treatment, but also had a good effect on healing the patients. Interaction between nurses and patients through caring, love, empathy, and compassion integrated with Islamic teaching helped to boost the healing effect. It could facilitate the patients to have a good connection with the nurses, their family members, and others, as well as help them to promote their spiritual health, by helping them to connect with God, helping them to get well, and helping them to have a good relationship with others. A compassionate interaction between a nurse and her clients and the integration of prayer and *dzikr* meditation as a part of the caring practice in Islam, helps improve and facilitate the balance of the body, mind, spirit, through the founding of connectedness of the four levels; the connectedness with self, connectedness with others (family), connectedness with the environment, and connectedness with God (Ismail & Hatthakit, 2018). This connectedness enhance the patients to understand their condition, the meaning and purpose in life; to be optimistic and adapt their lives in the environment and others in harmony; and strengthen their faith and inner energy. This act of caring is crucial to bring the patients healing and spiritual health.

In the present study, several Islamic caring actions were used, e.g., showing respect and blessing in the Islamic way, praying together for healing and asking help from Allah, encouraging the patients and the families to be patient with the disease and the risk of death, reminding the patients and their families to exercise their faith and pray

in dealing with suffering. In turn, the patients feel secure, safe, and confident with no feeling of loneliness. With the power of caring and incorporating Islam, the intervention program can effectively help to promote spiritual well-being and to reduce fatigue. This occurred because the connection to *Allah* can produce inner strength or spiritual energy (Henry, 2015; Sangkan, 2006), thereby, it can minimize the symptoms of fatigue as well (Aisyah, 2017).

Based on the discussions, it can be argued that the ICMB program could support Indonesian women with advanced breast cancer undergoing chemotherapy to enhance their spiritual well-being attributed it to meaning/peace and faith, and alleviate fatigue symptoms. Nonetheless, the present study tested the program that used Islamic caring for the Indonesian women with advanced breast cancer undergoing chemotherapy integrated with daily of Islamic religious practice. As a result, the effective outcomes for both spiritual well-being and fatigue were evident. The main reasons were contributing factors related to the Islamic religious practice in the intervention group. This is explained in more detail below.

In Indonesia 87% of people are Muslim. In Muslim society, ritual religious practice is compulsory, such as prayer, and additional worship namely *dzikr*. Surprisingly, some Muslims are not aware of the benefit of prayer and *dzikr* meditation for healing. Prayer and *dzikr* meditation have a great effect on physical and mental health if someone performs correctly with *khushu*. The present study found that all of the participants (100%) could follow the prayer with *khushu* after receiving an explanation about how to perform prayer correctly. Compliance following the program from the first session to the second session (three weeks after baseline) was 88.53% (Appendix I). This

was because the participants in the intervention group received chemotherapy treatment mostly in the first cycle (41.5%) (Table 4-2), so, they experienced obstacles in following the program because of the side effects of chemotherapy that were felt, such as nausea, fatigue, vomiting, and difficulty sleeping. However, all participants said that praying solemnly followed by *dzikir* meditation could provide a feeling of peace, calm, a spirit of life and also strengthen their faith while undergoing chemotherapy. They assumed that their suffering is part of the test that is given from *Allah*. So, they have to be sincere (*ikhlas*) and accept their disease and pray to *Allah*.

In line with Lewis et al. (2014) and Oh and Kim (2014), it was reported that breast cancer patients found themselves comfort in spiritual activities as well as there was a significant association among the spiritual intervention and positive spiritual outcomes.

Next, the other reason is that the ICMB program can reduce fatigue level in breast cancer patients undergoing chemotherapy. It was found in the current study that breast cancer patients who received chemotherapy experienced fatigue. The muscle weakness caused by the stimulation of cell oxidative reactions from peroxidation lipid and protein carbonil as they are released from doxorubicin and delivered to C2C12 myotubes which will activate caspases enzymes and proteolysis resulting in muscle cell apoptosis.

It causes a reduction of muscle mass and contraction ability was reduced as the originator of the complaint of fatigue (Ghulam & Clair, 2011, Neefjes, et al., 2013, Aisyah et al., 2015). The practice of Islamic prayer (*salat*) would help the muscle cells contract in an effort to compensate for the oxidative response of muscle cells due to chemotherapy, because the repetition of movements during Islamic prayer activities was equivalent to muscle strength training (Ibrahim & Ahmad, 2012). Islamic prayer can be

considered as a slow moderate exercise (Bai et al., 2012; Hashim et al., 2010; Imamoglu, 2016). Additionally, the bowing position in Islamic prayer could stimulate the lungs due to the alignment of the spine and head to help the diaphragm muscles for deep breathing (At-Tharsyah, 2007). After bowing and continuing to standing position with both hands raised could increase the flexibility of the chest muscles for breathing. This might help to clear the airways and improve ventilation (At-Tharsyah, 2007). Ultimately, it can increase oxygen delivery all over the body and improve the hemoglobin level, thus lowering the risk of fatigue.

In addition, the bowing movement stimulates bowel circulation, which increases the absorption of nutrients. It would increase the ATP, which is necessary for muscle contraction, so fatigue can be reduced. In addition, the prostration movement supports the delivery of oxygen to the whole of the body especially to the human brain, which has benefits for cognitive improvement (Reza et al., 2002).

Other possible reasons explaining the ICMB program reducing fatigue symptoms were the concentration as a result of prayer. Concentration of prayer has the same benefits of meditation as mind and body exercise (At-Tharsyah, 2007; Sayeed & Prakash, 2013). Some studies reported that cancer related-fatigue has been proven to be overcome by mind-body exercises like yoga, tai chi, qigong (Chan et al., 2013; Dujits et al., 2010). Conditions of relaxation during prayer can be achieved when praying with deep concentration, quietly and slowly with the main focus on God (Azis, 2013). This is called the process of transcendental meditation, which has an impact in reducing stress hormones, particularly cortisol (Boelens et al., 2009; Sholeh, 2010).

Moreover, prayer also could improve coping strategies to reduce psychological distress. When someone practiced prayer, their gamma brain waves were found to be higher than those resulting from music therapy. Gamma waves indicate that the brain was in the active process of thinking (Ridzwan et al., 2011). This proved that the practice of prayer would produce an effective coping strategy, so that it would help patients to think more clearly, rationally and calmly about the problems and stresses. The effectiveness of coping strategies is required to prevent distress psychologies undergoing chemotherapy. Since the psychological distress condition has been the most powerful predictor of the severity of fatigue (Bower et al., 2014; Horneber et al., 2012; Mock et al., 2007).

The participants stated that the ICMB program was able to help them to improve their cognitive abilities, feel calm, and physically they felt fresh and had more energy, so they were able to do an activity, and had a spirit for life.

All things considered, the ICMB program challenged the nurses in terms of managing and supporting spiritual well-being, as well as reducing fatigue in women with breast cancer who were suffering while receiving chemotherapy treatment. In line with Henry (2015), it was reported that delivering spirituality in Islam could generate spiritual energy that may deliver physical, psychological, and spiritual well-being.

In addition, the present study reported that there is a positive correlation between spiritual well-being and fatigue ( $r = .430$ ,  $p = .000$ ). It means that higher spiritual well-being would alleviate the fatigue symptoms. In other words, the nurses should consider that by increasing spiritual well-being, it would potentially reduce fatigue and vice versa.

Furthermore, the additional knowledge found from this study, such as, the trend of the ICMB program has an effective impact in spiritual well-being and the level of

fatigue since Time-2 (days 3-4) and Time 3 (days 23-24), respectively, after chemotherapy treatment. The spiritual well-being gradually increases across time with adding intervention every 3 weeks. And the fatigue level gradually decreases across time with adding intervention every 3 weeks as well.

To sum up, this program could be suitable with Indonesian women with advanced breast cancer undergoing chemotherapy, due to these women routinely practice of prayer and *dzikr* meditation as a part of their daily life.

## **Summary**

The findings of this present study support that the Islamic Caring Mindfulness-based program had a significant effect for improving spiritual well-being and alleviating fatigue in women with advanced breast cancer. This effect happened due to the program being well prepared and it followed the guidelines. The advanced breast cancer patients were given knowledge and were ensured to correctly practice the program. Moreover, the program was organized by the researcher using the guidelines of the Islamic caring mindfulness-based program, to ensure that the patients attain religious intervention through caring from nurse. Whereas, the research assistants only helped in collecting the data.

By and large, the Islamic Caring Mindfulness-based Program (ICMB) could be considered a powerful nursing practice to improve spiritual well-being and reduce fatigue in women with advanced breast cancer during chemotherapy treatment within the Indonesian-Muslim context. It is an application of holistic care in nursing.

Holistic care in nursing emphasizes on healing the whole person and considers every aspect of life and its effect on a person's well-being. The wholeness of the participants was facilitated through the connectedness of self, others, the environment, and God. The connection of each dimension contributes to wholeness and well-being for a person as well as facilitates the well-being of each other dimension. Thus spiritual and physical health can have bidirectional influence on each other. And finally can improve the spiritual well-being and reduce fatigue.

Holistic care is healing the mind, body, and soul of the patients. It incorporates thinking about and helping patients with the effects of disease on their mind, and body, their emotions, their religious beliefs, spirituality, and personal relationships. The provision of holistic care also takes into consideration social and cultural differences and preferences of patients.

In the present study, the researcher used interventions, namely, prayer and breath *dzikr* meditation practice, and an Islamic based caring approach which plays an important role in healing and recovery. The outcome, namely improved healing, of this study is a consequence of a compassionate interaction between a nurse and her client and the applications of prayer and *dzikr* meditation. Therefore, it can be defined as a form of a holistic intervention which helps to strengthen the soul, body, and mind, and it also promotes interconnectedness with emotions, environment, relationships, and social and cultural aspects of life. Hence, in this case, the program is suitable for Indonesian Muslim women with advanced breast cancer undergoing chemotherapy.

## CHAPTER 5

### CONCLUSION AND RECOMMENDATIONS

This chapter concludes this study. It contains the summary of the research findings, strengths and limitations of the study. It also states the implications and recommendations.

#### **Conclusion**

This investigation involved a clinical trial of an Islamic Caring Mindfulness-based program (ICMB) on Indonesian women in a randomized controlled trial with advanced breast cancer undergoing chemotherapy treatment at a teaching hospital in the West Java Province, Indonesia, from January 2018 – July 2018. In the random assignment, the sample allocation was concealed by minimizing a randomization program in order to allocate participants on a random basis. The participants are controlled by the computer program with four variables that contain: age, cancer stage, cycle of chemotherapy and marital status. The process obtained 126 eligible participants. Yet, there were only 120 participants who had been enlisted for the study that met the criteria. Finally, a total of 112 (intervention group = 53 and control group = 59), agreed to enroll and the program continued to be fully implemented. There were eight participants drop out in both groups (one died, one changed setting, one changed regimen, five rescheduled more than 10 weeks).



The two dependent variables, spiritual well-being, and fatigue were inspected. There were three instruments that were used to support this study: (1) a demographic questionnaire, (2) The Functional Assessment Chronic Illness Therapy-Spiritual Well-Being (FACIT-Sp) by Cella et al. (1993), (3) The Functional Assessment of Chronic Illness Therapy-Fatigue (FACIT-F) by Yellen et al. (1997). The value of .72 and .76 were the tolerable values of the coefficients of the Cronbach's alpha in the current study.

The ICMB program was developed in accordance with Islamic philosophy, and consisted of Islamic based caring, practice Islamic prayer and breath *dzikr* meditation. The activities were carried out for women with advanced breast cancer who were either newly diagnosed or recurrent cases in the chemotherapy phase. This program was provided for the intervention group up to three times. The outcomes were assessed four times: in the first meeting (day-1, baseline, Time-1), at days 3-4 (Time-2), at days 23-24 (Time-3), and days 44-45 (Time-4), while the control group only received standard care. There were insignificant differences in advanced breast cancer patients' characteristics between the control and intervention groups. Data analysis was performed using descriptive statistics, repeated measures analysis of variance, and t-test with SPSS, Version 16 (IBM<sup>®</sup>, USA).

The main purpose of this study was to investigate the effects of the ICMB program on spiritual well-being and fatigue in Indonesian women with advanced breast cancer undergoing chemotherapy. It was expressed, using repeated measures ANOVA, that spiritual well-being was significantly improved by time from the Time-1 (baseline), at Time-2, Time-3, and Time-4 ( $F = 11.83, p < .001$ ) (Table 4-5). Participants in the intervention group also had a mean score of more improvement in spiritual well-being at

Time-2, Time-3, Time-4 ( $t = 4.74, p < .001; t = 8.70, p < .001; t = 12.91, p < .001$ ) as well as significantly more improvement in spiritual well-being at Time-2, Time-3, Time-4 when compared to those in the control group ( $p < .001, p < .001$ ) (see Table 4-3). In addition, the difference of fatigue was significant by time ( $F = 7.53, p < .001$ ) as well as by group ( $F = 16.16, p < .001$ ). The participants in the intervention group had mean score higher in fatigue at Time-3 and Time 4 ( $t = -3.36, p < .005; t = -5.79, p < .001$ ) (see Table 4-4), also significantly higher mean score of fatigue at Time-3 and Time-4 when compared to those in the control group ( $p < .001; p < .001$ ) (see Table 4-4).

The results of the main hypotheses tested were as follows: in Hypothesis 1, the score of spiritual well-being in the intervention group is significantly higher at Time-2, Time-3, and Time-4 than those in control group. Moreover, in Hypothesis 3, the spiritual well-being score is significantly higher at Time-2, Time-3, and Time-4 after receiving the program compare to baseline. Therefore, in the current study, the results supported Hypothesis 1 and 3.

Hypothesis 2 and 4 were supported in so much as the fatigue level decreased at Time-3 and Time-4 after receiving the program as compared to before receiving the program. Nonetheless, the result revealed that the fatigue levels of both the intervention and control group dramatically increased at Time-2, but the fatigue level was significantly decreased across time (Time-2 to Time-3 to Time-4) for the intervention group. Possible reasons are the ICMB program may not be effective for a higher fatigue level, and it requires time to earn the expected benefits from the practice. Nevertheless, the results showed that the ICMB program significantly reduces the fatigue level at Time-3 (days 23-24) and Time-4 (days 44-45) day time points after receiving the ICMB

program. Moreover, the participants had a significantly lower level of fatigue in the intervention group after receiving the program when compared to the control group. Therefore, in this study, these results supported Hypothesis 2 and 4.

### **Strengths and limitations of the study**

Several strengths were revealed in this study. The first strength is a remarkable preliminary evidenced-based one in that the clinical nursing trial could produce the possibility of the highest evidence in nursing research in order to promote the balancing modalities for increasing spiritual well-being, and reducing fatigue in advanced breast cancer women who were still undergoing chemotherapy. The recent studies also supported the outcomes of holistic health that are influential in enhancing a good life throughout cancer therapy. In addition, the process of the implementation of complementary modalities for oncology patients undergoing treatment by oncology professionals and healthcare teams was clearly revealed.

Secondly, the program has been designed based on Islamic caring, the practice of Islamic prayer and practice of breath *dzikr* meditation, therefore, the Indonesian Muslim women (participants) with advanced breast cancer were familiar with this program. Therefore, this program made it easy for them to accept, acquire, and apply in their lives. Thus, it proves that advanced knowledge of nursing care can effectively be utilized with Eastern wisdom in oncology patients to relieve suffering.

Thirdly, the patients attempted to find ways to overcome and survive when they faced a life-threatening condition, namely cancer. For Muslims, there are some ways suggested for seeking help, for example: conducting prayer (supplication) direct to God.

God told humans through the Quran (2: 45-46) that patience and prayer are the key to find help, so, the program is suitable for this group.

Fourthly, the study design is a randomized control trial with repeated measures. The outcomes of the study were measured at each time point (four times) at baseline, on days 3-4, days 23-24, and days 44-45, in each group. These scores were the actual responses from the intervention and control groups. The duration consisted of the first meeting for the first intervention, day-21 for the second intervention, and day-42 for the third intervention, as well as home practice of six weeks. Therefore, the study displayed the trend of the effect of the intervention over time, hence, the results can be used as a reference in providing nursing services to patients with advanced breast cancer in terms of improving spiritual well-being and reducing fatigue.

However, some limitations in the process were discovered. Firstly, the researcher could not control the situation between the intervention and the control group or the environment after patients received chemotherapy treatment. In order to resolve the problem, the researcher isolated the intervention and the control group by using different rooms.

Secondly, the researcher could not conduct observations directly regarding the practices of the program in the participants' homes, such as, doing prayer properly and breath *dzikr* meditation. However, the researcher used a phone call to discuss the program, and made sure that all of the participants in the intervention group could follow the program properly, by giving individual training in prayer and breath *dzikr* meditation at the first meeting. Also, the researcher assigned the participants to make a self-report of daily practice at home every day.

## **Implications**

The outcomes of this study were applicable to nursing implications. Consequently, this study may be expanded to include the important nursing knowledge in practice, educationally, health policy, and research. These issues are deliberated in more detail below.

*Nursing Practice.* This study discovered the explicit implications for nursing practice by the ICMB program. This study described the highest evidence-based study for optional care on advanced breast cancer women throughout chemotherapy treatments. According to recent findings, the advanced breast cancer patients desired to learn about how to do prayer correctly and breath *dzikr* meditation, and its benefit for their conditions. Also, professional oncology nurses should learn about Islamic caring. Therefore, this was a very useful and helpful intervention for breast cancer patients. Oncology professional nurses can deliver information about the program to target populations. Hence, the professional nurses could implement this method for the women with breast cancer who are receiving chemotherapy. In order to implement the program, professional nurses should learn about the Islamic caring mindfulness-based approach. It could start from very basic things, for instance, greeting, touching, showing respect, and blessing in the Islamic way. Also, praying together for healing, as well as using touch in the Islamic way to show their attention and concern. Likewise, patients and their families should be encouraged to be patient with the illness and death risk by praying and asking Allah to cure the disease. As well as, the patients and their families will be asked to accept the disease as expiation and death as a journey to meet Allah. All these competencies were needed for nursing care during chemotherapy infusions.

Additionally, the women with advanced breast cancer not only were given Islamic caring, but also engaged in prayer and breath *dzikr* meditation practice. Therefore, professional oncology nurses must take a role to arrange media and boost oncology patients to practice. As a consequence, patients can denote their discipline and skills. Nevertheless, for the group with fewer cooperative patients, they need support to practice due to the side effects of chemotherapy. Therefore, nurses should carefully evaluate the reasons in the minds of patients to provide care, delay, or postpone optional nursing care.

Patients who can follow the Islamic caring mindfulness-based program can change their viewpoint in such a way so that they can be aware of the reality of their life as they try to find balance in their life while suffering from cancer. The ICMB program could be a special nursing program for enhancing spiritual well-being, and alleviating fatigue, and it might also be expanded in order to increase the outcome of holistic health originating in religion and spiritual healing. In the general context, religious spiritual care can provide well-being, and it should be recorded as being implemented in the professional nursing roles.

***Nursing Education.*** The Islamic caring mindfulness-based program recommended in this study was an excellent example of the practice of the nursing role in oncology; hence, the nursing curricula should promote the Islamic caring mindfulness-based program in order to broaden the nursing knowledge of complementary therapy as an eastern wisdom application. This purpose is intended to get holistic and successful health outcomes. In addition, the effectiveness of the Islamic caring mindfulness program can be as a base for beginner nurses.

Moreover, Islamic principles can be applied in nursing curricula for nursing care. The principles can be actualized by implementing activities to begin self-nurturing actions to help establish harmony of life, peace, mind-body balance, happiness and healthiness. All of these are the essential in nurturing equanimity in the care of people who suffer from diseases, such as oncology patient.

***Health Care Policy.*** The success in enhancing spiritual well-being and alleviating the fatigue symptoms in oncology patients is not only determined by the professional oncology nurses, but also the health policy as a basis of implementation while providing a health service. Therefore, a policy regarding a nursing intervention for the advanced breast cancer patients undergoing chemotherapy should be developed. The policy should include guidelines, job description, and health coordination among nurses and other health providers in the cancer unit. This policy should be conducted and established at hospital level. Therefore, the health providers will follow the guidelines of the hospital based on their expertise. On the other side, the professional oncology nurses can apply the Islamic caring mindfulness-based program to improve the quality of nursing care as a holistic nursing.

## **Recommendations**

The recommendation consists of a recommendation for further study;

- 1) The present study was carried out in advanced breast cancer women, with stage IIIa, IIIb, and IIIc who were over 18 years old. It would be fascinating to duplicate the study in a specific group, for example, older or elderly women, younger women, and

survivors of cancer. Because the program was based on a Muslim's daily life religious practice, therefore, it could be compatible with every Muslim patient.

2) The present study focused on spiritual well-being and fatigue outcomes. Thus, it would also be remarkable to study other aspects regarding psychological distress and physical distress, as well as the quality of life, because the current study revealed the psychological problems might affect the physical and spiritual dimension due to side effects of chemotherapy treatment.

3) The current research could be duplicated using the same methodology, randomized controlled trial, or qualitative study in other settings, and other types of cancer or terminal diseases. It would be interesting to enrich the nursing evidence-based on implementation in this area. Understanding physically, psychologically or emotionally, and using quantitative and qualitative design to explore successful experiences of patients after applying Islamic mindfulness-based practices while undergoing chemotherapy would be interesting as well. In addition, the Islamic cultural context should be included in the application of complementary modalities across all cancer treatments or terminal disease.



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**APPENDICES**

## APPENDIX A

### Instruments for Data Collection

#### 1. The Demographic Data Questionnaire

1. Age : \_\_\_\_\_years
2. Education:
  - Primary
  - High School
  - University
3. Occupation :
  - Unemployed
  - Employed
4. Marital status:
  - Single
  - Married
  - Widow
5. How many children do you have?
  - 0 - 2
  - 3 - 5
6. Family income
  - Adequate:
  - Inadequate
7. Family caregiver  
Relationship with the advanced breast cancer patient
  - Spouse
  - Child
  - Parent
  - Other specify.....

8. Health insurance
- Non health insurance
  - BPJS
  - Other specify .....

### Medical History

1. Breast cancer staging:
  - IIIa       IIIb       IIIc
2. Breast cancer treatment
  - a. Have you received surgical treatment?
    - No
    - Yes
  - b. Chemotherapy treatment
    - FAC               TAC               AC+ paclitaxel
 What chemotherapy cycle are you currently taking?
    - 1               2               3               4
  - c. Menopause
    - Not yet               Yes
  - d. Comorbidities
 

Current health problem: \_\_\_\_\_

Some common health problems \_\_\_\_\_

Other health underlying health problems:  DM,  Hipertensi,  
 CRF,  other
  - e. Hemoglobin level : .....mm/dl



## 2. The Questionnaire of Khushu Prayer

No	Statement	Strongly agree	Agree	Disagree	Strongly disagree
1	I recite dua with a full appreciation and slowly when I am praying ( <i>salat</i> ).				
2	When I am praying ( <i>salat</i> ), I feel that I am communicating with God and I am in front of God.				
3	I am trying to concentrate when I am praying ( <i>salat</i> ) and I do not distract on something else.				
4	When I recited Al-Fatihah, my mind was wandering anywhere.				
5	I could not understand well what the meaning of recitation and movement when I am praying ( <i>salat</i> ).				
6	People who perform prayer may not have a spiritual awareness and beliefs.				
7	When I say <i>takbir</i> "Alloohu Akbar" and recitation of the prayer, my heart fully understands that Allah is the Greatest.				
8	" <i>Subhaana robbiyal'adhimi wabihamdihi</i> " that means, The glory be to my Lord who is the very Greatest and the Praises to				

No	Statement	Strongly agree	Agree	Disagree	Strongly disagree
	God.				
9	Carrying out the worship prayer, may keep someone away from indecency and evil.				
10	I recite Surah Al-Ikhlās quickly without understanding what the meaning.				
11	Performing prayer correctly is easy.				
12	I do not enjoy every movement of prayer from <i>takbir</i> until greetings.				
13	When I recited <i>iftitah</i> , I confront my face to the God who created the heavens and the earth.				
14	The worship that I do as a means of connecting the human to God.				
15	I pray to God Almighty seriously and do not turn away from Him.				
16	I do not believe fully the greatness of God.				
17	When I took a prayer, I did not straighten the rows and chummed up with them together				
18	I ignore when the calling for prayer time is coming.				
19	When I prostrate, I admit the weaknesses and acknowledged His Greatness.				

No	Statement	Strongly agree	Agree	Disagree	Strongly disagree
20	I believe that someday I will meet the God and everyone will come back to Him.				
21	If I heard the name of Allah SWT, then my heart trembled.				
22	I doubt the instructions of Allah.				
23	I do not believe in the Judgment day.				
24	I am not afraid of the punishment from God.				
25	By performing prayer, make me concerned about the orphans and the poor people.				
26	The prayer makes me more optimistic.				
27	After performing the prayer, I felt being more patient to face the problem.				
28	Although I performed prayer, however, I still lie and not independent.				
29	Although I performed prayer, I still undisciplined.				
30	I performed prayer, because I would like to get the respect from the others.				

### 3. The Spiritual Well-Being

No.	Statements	not at all	a little bit	some- what	quite a bit	very much
1.	I feel peaceful.					
2.	I have a reason for living.					
3.	My life has been productive.					
4.	I have trouble feeling peace of mind.					
5	I feel a sense of purpose in my life.					
6	I am able to reach down deep into myself for comfort.					
7	I feel a sense of harmony within myself.					
8	My life lacks meaning and purpose.					
9	I find comfort in my faith or spiritual beliefs.					
10	I find strength in my faith or spiritual beliefs.					
11	My illness has strengthened my faith or spiritual beliefs.					
12	I know that whatever happens with my illness, things will be okay.					

#### 4. Fatigue

No.	Statements	not at all	a little bit	some- what	quite a bit	very much
1.	I feel fatigued.					
2.	I feel weak all over.					
3.	I feel listless (“washed out”).					
4.	I feel tired.					
5.	I have trouble starting things because I am tired.					
6.	I have trouble finishing things because I am tired.					
7.	I have energy.					
8.	I am able to do my usual activities.					
9.	I need to sleep during the day.					
10.	I am too tired to eat.					
11.	I need help doing my usual activities.					
12.	I am frustrated by being too tired to do the things I want to do.					
13.	I have to limit my social activity because I am tired.					



**6. Eastern Cooperative Oncology Group (ECOG) Performance Scale**

<b>Performance status</b>	<b>Definition</b>
0	Fully active, no performance restrictions
1	Strenuous physical activity restricted; fully ambulatory and able to carry out light work
2	Capable of all selfcare but unable to carry out any work activities. Up and about >50 percent of waking hours
3	Capable of only limited selfcare, confined to bed or chair >50 percent of waking hours
4	Completely disabled; cannot carry out any selfcare; totally confined to bed or chair

## 7. Reflection Guide

Instructions. The researcher used this guideline to encourage the participants to reflect their feelings, physical, and spiritual problem during follow the program.

1. How do you feel when you practice the *khushu* prayer or meditation?
2. What is difference between before and after practicing the *khushu* prayer and meditation?
3. What do you feel about physical problems after practice the program?
4. What changes do you perceive after practice the prayer and breath *dzikr* meditation?
  - Knowledge and experiences about breast cancer disease, *khushu* prayer and breath *dzikr* meditation
  - Physical problem: fatigue
  - Spiritual problem: sense of peace, meaning of life and hope
5. What are the barriers while practice *khushu* prayer and *dzikr* meditation?



## APPENDIX B

### Informed Consent Form

My name is Maria Komariah. I am a Doctoral of Philosophy student at the Faculty of Nursing, Prince of Songkla University, Hat Yai, Thailand. I am also a lecturer at the Faculty of Nursing, University of Padjadjaran, Bandung, Indonesia. I am conducting a research study on the effects of Islamic caring mindfulness-based program on spiritual well-being and fatigue in Indonesian Women with Advanced Breast Cancer (ABC).

The objective of the study is to examine the effect of Islamic caring mindfulness-based program on spiritual well-being, and fatigue in Indonesian women with ABC. This study will be conducted within six weeks and the findings of this study are expected to enhance the psychological and spiritual well-being and reduce fatigue in Indonesian women with ABC.

You have the rights to participate voluntarily and you can withdraw from this study without any consequence. If you agree to participate in this study, please kindly sign this informed consent form. There is no known risk or harm in participating in this study. Nevertheless, this program will make require you to spend with us. I will also explain the benefits and confidentiality, and the following procedures of the study:

A. The beneficence and confidentiality

This study will help the patient to enhance their psychological and spiritual well-being, and reduce fatigue during chemotherapy treatment. The findings of this study will strengthen the evidence based nursing for oncology nurse in the application of an

effective nursing care for the cancer patients. The findings of this study would provide information for further research in the related phenomena.

The researcher will keep the confidentiality and anonymity of the data. Neither your name nor any identifying information will be used in the report. The data can be only assessed by the researcher, advisors, and research committee at PSU Hat Yai, Thailand.

B. Procedures of the study

You will be assigned either in the experimental or the control group. In the experimental group, you will be trained about how to prayer correctly and breath *dzikr* meditation, as well as gave knowledge about the disease. You also will be required to practice *khushu* prayer and breath *dzikr* meditation regularly. The rule of the program will be explained in the first meeting of the program and you are asked to follow it. On the other hand, at the same time, if you are assigned to the control group, you will only receive the routine care from the chemotherapy unit at the hospital. Then, if you are interested, there will be a chance for you to join the program at the end of this study.

C. Evaluation

You will be asked to complete the Demographic Data Questionnaire, the Functional Assessment of Chronic Illness Therapy (spiritual), the Functional Assessment of Chronic Illness Therapy-Fatigue, the questionnaire of Khushu prayer, and mindfulness at the baseline. The instruments will be given to both groups. The participants will be asked to fill the instruments 3-4 days after receiving chemotherapy.

If you have any question, please do not hesitate to contact me by phone +6289611556007 or the research assistance. Thank you for your participation in this research study.

The participant

The researcher

(Your signature)

(Maria Komariah)

## APPENDIX C

### Sample Size Estimation

The sample size of this study is estimated using power analysis. The standard power of 0.80 will be used to reduce the risk of type II error. The level of significance ( $\alpha$ ) is set at .05 to reduce the risk of a type I error. The sample size will be determined based on the previous effect size (ES). The effect size index for t-test of means in a standard unit, which is calculated from the following formula (Cohen, 1988; p. 20).

$$ES = \frac{M1 - M2}{\text{Pooled SD}}$$

M1, M2 is population means, and

Pooled SD is the common within-population standard deviation.

$$\text{Pooled SD} = \sqrt{\frac{(SD_1)^2 + (SD_2)^2}{2}}$$

The researcher will estimate value based on result of the previous intervention study which investigates the effects of mindfulness based stress reduction program on spirituality and psychological well-being for survivors of breast cancer (Lengacher et al., 2009). They found that mean score of the control group (Ma) = 33, SD = 8.911 and mean score of the intervention group (Mb) = 28.3, SD = 9.15 then the value is entered to the Cohen (1988) formula.

$$\text{Pooled SD} = \sqrt{\frac{(8.911)^2 + (9.15)^2}{2}} = \sqrt{\frac{163.13}{2}} = \sqrt{81.56} = 9.03$$

$$ES = \frac{M_1 - M_2}{Pooled\ SD}$$
$$ES = \frac{33 - 28.3}{9.03} = 0.52$$

This study showed that the mean score of the control group was ( $M_1$ ) = 33,  $SD_1$  = 8.91 and the mean score of the intervention group was ( $M_2$ ) = 28.3,  $SD_2$  = 9.15. Then these values were entered into the Cohen (1988) table.  $ES = 0.52$  was obtained from the previous study. So, the function of the number was to decide the sample size by using the tables of Cohen (1988, p 30-31). In the Cohen table, for power 0.8,  $\alpha = 0.5$ ,  $ES = 0.5$ , the sample size is 63, and if  $ES = 0.6$ , sample size recommended 44. Since from previous study  $ES = 0.52$ , therefore, the sample size estimated between 44 – 63. Hence, the researcher decided to use a 50 sample size.

## APPENDIX D

### Assumptions

#### Assumption for *t*-test

1. The sampling distribution is normally distributed

In this study, one-hundred and twelve samples were recruited. Skewness and kurtosis analysis were applied to determine normality data. The result reported that the skewness and kurtosis of the intervention group were in the normal range of normality data. So, these data met the assumption, and they were used for next analysis of *t*-test.

2. Data are measured at least at the interval level

In this study, all variables were measured at a ratio. Thus. This assumption was met.

3. The data are independent for independent *t*-test (except for pair *t*-test)

In this study, independent *t*-test and dependent *t*-test were applied. For independent *t*-test, the data recruited from two groups independently; the control and experimental groups. For independent *t*-test (pair *t*-test), the independent variable consists of two categorical, ‘related groups’ or ‘matched pairs’. Related groups’ indicates that the same subjects are present in both groups the data recruited from the group of time series (Time 1 = baseline, Time 2 = days 3-4, Time 3 = days 23-24, Time = days 44-45. Thus, this assumption was met.

Table 9

*Comparison of Normality Test of Each Variable Using Skewness and Kurtosis, Standard Error of Skewness and Kurtosis and Skewness and Kurtosis Value (Control Group = 59, Intervention = 53).*

Variable	Skewness		Kurtosis		Skewness value		Kurtosis value	
	SE of	SE of	SE of	SE of				
	Skewness	Skewness	Kurtosis	Kurtosis				
	(.311)	(.327)	(.613)	(.644)				
	Control	Intervention	Control	Intervention	Control	Intervention	Control	Intervention
group	group	group	group	group	group	group	group	
	<i>n</i> = 59	<i>n</i> = 53	<i>n</i> = 59	<i>n</i> = 53	<i>n</i> = 59	<i>n</i> = 53	<i>n</i> = 59	<i>n</i> = 53
SWB 1	-.097	0.353	-.637	-.033	-.312	1.080	-1.039	-.051
SWB 2	-.370	-.097	-.588	-.535	-1.190	-.297	-1.960	-.831
SWB 3	-.092	.054	-.575	-.471	-.296	.165	-.938	-.731
SWB 4	-.315	-.728	-.562	-.060	-1.013	-2.226	-.917	-.093
Fatigue 1	-.507	-.190	-.070	-.950	-1.630	-.581	-.114	-1.475
Fatigue 2	-.523	-.314	.048	-.286	-1.682	-.960	.078	-.444
Fatigue 3	-.440	-.556	-.776	-.249	-1.415	-1.700	-1.266	-.287
Fatigue 4	.099	-.477	-.804	-.280	.318	-1.459	-1.312	-.435

4. Variances in these populations are roughly equal (homogeneity of variance). The homogeneity of variance in this study was varied. Some of them are not met the assumption (Table 10). The Table 10 showed that only four variables were met the assumption for Levene's test for equality of variances. So, to solve this problem, the researcher followed statistical correction. For the variable that did not meet the assumption, the correction was performed done by interpretation the result from equal variances not assumed row.

Table 10

Homogeneity of Variance of Spiritual Well-being and Fatigue in the Control ( $n = 59$ ) and Intervention Group ( $n = 53$ ) in Each Variable

Variables	Levene's test for equality of variances		Interpretation
	F	<i>p</i>	
Spiritual well-being			
Baseline	10.375	.002	Non-homogeneity
Day 3-4	19.033	.000	Non-homogeneity
Day 23-24	36.472	.000	Non-homogeneity
Day 44 - 45	41.687	.000	Non-homogeneity
Fatigue			
Baseline	.257	.613	Homogeneity
Days 3-4	1.042	.310	Homogeneity
Days 23-24	2.592	.110	Homogeneity
Days 44 - 45	3.844	.052	Homogeneity



### **Assumption for ANOVA**

1. The sampling distribution is normally distributed

In this study, the procedure of examining for data distribution of all variables was conducted. The assumption of normally distribution for the Repeated Measures ANOVA and *t*-test were similar.

2. The data are independent

In this study, the data recruited from two groups independently; the control and intervention groups. The variables of spiritual well-being and fatigue, the sample consisted of the control group = 59 and intervention group = 53. Thus, the assumption was met.

3. Data are measured at least at the interval level.

In this study, all variables were measured at a ratio. Thus, this assumption was met.

4. The variances need to be fairly similar

To examine the variance of the data, Mauchly's test of sphericity was conducted. For ANOVA, the result of the sphericity reported that all of the variances did not meet the assumption were made a correction by interpretation the results from Epsilon Huynh-Feldt correction.

For the post hoc test, the Levene's test for equality of variances was examined to determine the variable of fatigue met the assumption. Almost all variables were met the assumption, except spiritual well-being in the intervention group. Thus, the data were interpreted using Games-Howell test (Table 12)

Table 11

*Test of Sphericity on Spiritual Well-being, and Fatigue in the Control Group (n = 59) And Intervention Group (n = 53)*

Variables	Mauchly's test of sphericity				Epsilon
	Mauchly's	Chi-Square	df	<i>p</i>	Huynh Feldt
Spiritual well-being	.741	32.652	5	.000	.893
Fatigue	.773	27.975	5	.000	.896

Table 12

*Homogeneity of Variance of Spiritual Well-being, and Fatigue in the Control Group (n = 59) and Intervention Group (n = 53)*

Variables	Levene's test for equality of variances	
	Control	Intervention
	<i>p</i>	<i>p</i>
Spiritual well-being	.374	.002
Fatigue	.638	.379

## **APPENDIX E**

### **Intervention Program Guideline**

#### **Islamic Caring Mindfulness-Based Program (ICMB) for Women with Advanced Breast Cancer Undergoing chemotherapy**

Islamic caring Mindfulness Based Program (ICMB) has been developed based on Islamic principles (the Five Pillars and True Faith) integrated with Islamic caring domain to help women with advanced breast cancer enhancing spiritual well-being and alleviating fatigue during conventional chemotherapy treatment.

#### **Background**

Women undergoing conventional treatment for breast cancer have holistic health effects during their cancer disease and treatment trajectory.

The concept of holistic care was applied to the development of a program with the aim of increasing spiritual well-being and reducing physical problem, e.g., fatigue, in patients with breast cancer. This concept is congruent in terms of belief, faith, and culture as one's way of life and can enhance physical and spiritual well-being in this group of patients. Therefore, the Islamic caring mindfulness-based program (ICMB) has been developed as an effective program to manage the symptoms of side effect chemotherapy, such as fatigue and subjective feeling of spiritual well-being by way of promoting a spirituality based Islamic theoretical framework. The aim of this article is

to clarify the details of all of the ICMB components and strategies for oncology nurses to deliver the intervention in order to enhance patient well-being during the advanced breast cancer with chemotherapy trajectory.

**Objective:**

To examine the Islamic caring mindfulness-based on spiritual well-being and the fatigue of Indonesian women with breast cancer undergoing chemotherapy.

**Target population:**

Target population was all Muslims patients with advanced breast cancer either new or recurrent patients that came for chemotherapy treatment were the target of this study. The inclusion criteria that was used to select the sample from the target population were as follows: (1) Muslim; 2) aged more than 21 years old; 3) having a diagnosis of stage III breast cancer from the medical record; 4) can perform basic daily activity with the Eastern Cooperative Oncology Group (ECOG) with Performance Score of 0-2; 5) being cognitively intact and without a documented diagnosis of mental illness; 6) being able to speak and understand Bahasa Indonesia; 7) having access to a telephone; 8) received chemotherapy treatments every 21 days.

**Setting**

The study was conducted in the chemotherapy unit at an University Hospital, West Java, Indonesia.

**Duration**

January, 2018 – July, 2018.

**The Teaching Plan of Islamic Caring Mindfulness-based on Spiritual Well-Being and Fatigue in Indonesian Women with Advanced Breast Cancer Undergoing Chemotherapy**

Session/ Stage/ day	Objectives	Medias	Duratio n/place	Action	
				Researcher	Participants
Session 1/stage1/day1  Preparation stage of the ICMB program, consist of:  1.Establishing of relationship  2. Provision of The information about the ICMB program	1. To establish relationship between researcher and patients  2. To introduce the program  3. To invite the participant to join the study	<ul style="list-style-type: none"> <li>• Note book</li> </ul>	20 min/ hospital	<b>Establishment of Islamic caring relationship:</b> <ul style="list-style-type: none"> <li>• Say “Assalamu’alaikum” as a greeting in Islamic way to the potential participant to make a good relationship</li> <li>• Introduce myself to the breast cancer patients and their family to make them comfort.</li> <li>• Support the patients and family with showing respect in Islamic way (e.g., compassion)</li> <li>• Giving the attention and concern are using touch in Islamic way</li> <li>• Praying (du’a) together with the patients for healing</li> <li>• Encourage the patients and their families to be patient with the illness and risk of death by praying and asking help from Allah</li> <li>• Invite the patients to join the program</li> <li>• Involve the family in decision making process</li> <li>• Providing healing environment: clean and quite</li> </ul>	<ul style="list-style-type: none"> <li>• Answer the greeting</li> <li>• Introduce their selves</li> <li>• Listen</li> <li>• Answer the question</li> </ul>

Session/ Stage/ day	Objectives	Medias	Duratio n/place	Action	
				Reseacher	Participants
1	To give informed consent form	<ul style="list-style-type: none"> <li>• Note book</li> <li>• Assessme nt guideline</li> <li>• Demograp hic data</li> <li>• Informed consent form</li> <li>• Booklet</li> <li>• MP3</li> <li>• Instrument s</li> </ul>	20 min/  hospital	<p><b>Provision of the information about the ICMB program</b></p> <p>Explain the purpose of the program, as follow:</p> <ul style="list-style-type: none"> <li>• The program consists of three practice approaches, firstly Islamic prayer, secondly, breath dzikr meditation and lastly, Islamic caring. The duration of the program is 6 weeks and comprising of three main sessions. <ul style="list-style-type: none"> <li>▪ The goal of this intervention is to promote spiritual well-being and relief fatigue that lead to recovery.</li> <li>▪ The researcher will explain about the relationship between religion and faith and expected health outcomes that is necessary for survival and resistance to disease (e.g. cancer), because the spirituality, along with religious forces such as prayer and meditation, have an important role in disease acceptance. In this program, spiritual support and religious resources, as well as having a strong relationship with the higher power can improve the psychological and spiritual health and reduce fatigue.</li> <li>▪ The researcher will ask the participant to join the study, if they agree, the resercher will give them the informed concent form as well as manual booklet and MP3</li> <li>▪ Pre-test (T1)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Listen</li> <li>• Answer the question</li> </ul>
2.	To give Manual booklet and MP3				

Session/ Stage/ day	Objectives	Medias	Duratio n/place	Action	
				Reseacher	Participants
Session 1/ stage 2/ day 1  The implemmentatio n stage of ICMB program, consist of:  1.Provision of general information about program and disease:  2. Provision of knowledge about the	1. To make the participants have a greater understanding about the purpose of the whole program including overview of the disease, as well as how to overcome the side effect during chemotherapy using Islamic daily practice in life, what they do, and what the purpose of doing, why they need to do prayer and meditation	<ul style="list-style-type: none"> <li>• Booklet</li> <li>• Note book</li> <li>• Guideline the program</li> </ul>	20 min/ hospital	<b>Provision of general information about program and disease:</b> <ul style="list-style-type: none"> <li>▪ Ask to the patient and their family, whether they are ready to get the information.</li> <li>▪ Explain the purpose of the program</li> </ul> <b><i>Explore the knowledge and information about the breast cancer</i></b> <ul style="list-style-type: none"> <li>• Ask the patient to tell the researcher in their own word what they need to know about breast cancer and common problems of the disease.</li> <li>• Add new information as needed (for instance: the common problems are psychospiritual disorder and fatigue)</li> <li>• Rephrase the information if the patient is not able to tell or show the researcher what the researcher have explained</li> <li>• Ask the patient to explain it back again about the material</li> </ul> <b>Provision of knowledge about the disease and complications.</b> <b><i>Explore and explain the knowledge about disease and complication</i></b> <ul style="list-style-type: none"> <li>• Ask the patient: to tell the researcher in their own words</li> </ul>	<ul style="list-style-type: none"> <li>• Listen</li> <li>• Answer the question</li> </ul>



Session/ Stage/ day	Objectives	Medias	Duration/ place	Action	
				Researcher	Participants
disease and complications  3.Provision of training, coaching and practicing to the participants  3.Reflection  Session 1/ stage 2/ day 1  Session 1/ stage 2/ day 1	correctly. 2. To make the participants have more understanding about the disease and complications			<p>what they need to know about breast cancer complications</p> <ul style="list-style-type: none"> <li>• Ask the patient to tell the researcher in their own words what they need to know about side effects of chemotherapy and common problems, such as, nausea, fatigue, hair loss</li> <li>• Add new information as needed</li> <li>• Rephrase the information if the patient is not able to tell or show the researcher what the researcher have explained</li> <li>• Ask the patient to explain it back again</li> </ul> <p><i>Explore the knowledge and experience about prayer and breath dzikr meditation</i></p> <ul style="list-style-type: none"> <li>• What they need to know about prayer correctly and breath dzikr meditation</li> <li>• Add new information as needed such as how to do prayer correctly and breath dzikr meditation, explain about breath dzikr meditation including definition, ways of practice, and benefits of breath dzikr meditation, as well.</li> <li>• Discuss about why the participants need to do and practice the program, even though, the prayer is a ritual for whole life in Muslim community, and why they still have psychological and spiritual problems.</li> <li>• Rephrase the information if the patient is not able to tell or show the researcher what the researcher have explained about prayer correctly and breath dzikr meditation</li> </ul>	

Session/ Stage/ day	Objectives	Medias	Duratio n/place	Action	
				Reseacher	Participants
				<ul style="list-style-type: none"> <li>Ask the patient to teach it back again</li> </ul>	
	1.To make the participants have a greater skill and ability to practice the intervention program	<ul style="list-style-type: none"> <li>Booklet</li> <li>MP3</li> <li>Note book</li> </ul>	45 min/ hospital	<p><b>Provision of training, coaching and practicing the program</b> <i>Explore the knowledge and experiences about prayer and breath dzikr meditation</i></p> <ul style="list-style-type: none"> <li>Ask the patient to tell the researcher what they need to demonstrate about prayer correctly and breath dzikr meditation</li> <li>Add new information as needed such as how to do prayer correctly and breath dzikr meditation</li> <li>Rephrase the information if the patient is not able to tell or show the researcher what the researcher have explained and demonstrated</li> <li>Ask the patient to demonstrate it back again</li> </ul>	<ul style="list-style-type: none"> <li>Listen</li> <li>Answer the question</li> <li>Demonstrate prayer and breath dzikr meditation</li> </ul>
				<ul style="list-style-type: none"> <li>Train, coach and demonstrate the practice regarding prayer correctly (10 minutes)</li> </ul> <p><i>Explain and demonstrate how to perform the prayer correctly:</i></p> <ul style="list-style-type: none"> <li>Avoid distractions and make the place is comfortable</li> <li>Start to perform <i>khushu</i> prayer with remembrance of Allah by understand what you're reciting</li> <li>The moment you realize that the heart and mind have</li> </ul>	

Session/ Stage/ day	Objectives	Medias	Duratio n/place	Action	
				Reseacher	Participants
				<p>wandered off, try to bring your attention back.</p> <ul style="list-style-type: none"> <li>- Take your time and perfect bowing and prostration</li> <li>- Always try to remind yourself that you are standing in front of Allah, pray as though you see Him, and then be aware that He is definitely seeing you.</li> <li>- Imagine that this is your last prayer</li> </ul> <ul style="list-style-type: none"> <li>• Train, coach, and demonstrate the practice regarding breath dzikr meditation (30 minutes)</li> </ul> <p><b><i>Explain how to do breath dzikr meditation:</i></b></p> <ul style="list-style-type: none"> <li>- Take a comfortable sitting position, closing eyes, relax of muscle</li> <li>- Read <i>Basmallah</i>, creed, and <i>istighfar</i> (forgiveness), then continue with <i>shalawat</i>. This reading is not <i>mantra</i>. The goal of this reading is to direct our soul to God. Begin to pay attention to the breathing rhythm,</li> <li>- Then followed with breath <i>dzikir</i> using <i>Huu Allah</i>, or <i>subhanallah</i>, or the Beautiful name of Allah (<i>Asma'ul Husna</i>)</li> <li>- For example: when inhale, the heart dzikr, <i>Huu</i> (which means: Allah, God), and when exhale, heart dzikr, <i>Allah</i> (God)</li> <li>- To close, offer everything that has been done to God and conclude the whole process with reading the <i>Hamdallah</i></li> </ul>	

Session/ Stage/ day	Objectives	Medias	Duratio n/place	Action	
				Reseacher	Participants
				and <i>shalawat</i> (blessing) to the Prophet Muhammad. - You can do the breath dzikr meditation around 30 minutes, twice daily	
	1.To encourage the participants to reflect their feelings, physical, psychological and spiritual problems, as well as peace of their mind.	<ul style="list-style-type: none"> <li>• Note book</li> <li>• Reflection guide</li> <li>• Recorded</li> <li>• Self-report form</li> <li>• Instrumen ts</li> </ul>	10 min/  hospital	<p><b>Reflection</b></p> <ul style="list-style-type: none"> <li>• Do the reflection, the researcher will guide the reflection using list of the questions <ul style="list-style-type: none"> <li>- Give time to the patient and family to ask questions</li> <li>- Answer any questions the patient and family have</li> </ul> </li> <li>• Ask the participant to perform the correct prayer and breath dzikr meditation in their home.</li> <li>• Ask the patients to fill the instruments between 48 and 72 hours after each chemotherapy treatment.</li> </ul>	<ul style="list-style-type: none"> <li>• Listen</li> <li>• Express fillings</li> <li>• Sharing experienced</li> <li>• Answer the question</li> </ul>



Session/ Stage/ day	Objectives	Medias	Duratio n/place	Action	
				Reseacher	Participants
Session 2/stage 2/day 21	1.To evaluate the mindfulness after pratice  2.To encourage the participants to reflect their feelings	-Note book -Reflection guide -Recorded form -Self- report form -instruments	10 min/ hospital          Home	<b>Reflection:</b> <ul style="list-style-type: none"> <li>• Guide the patients to do the reflection</li> <li>• Ask the patient about their feelings regarding practicing the intervention program</li> <li>• Ask the patient about problems regarding practicing the intervention program</li> <li>• Assess the patient’s barriers during practicing the program</li> <li>• Answer any question the patient and family have</li> <li>• Measure the second post test within 48 to 72 hours after receiving the chemotherapy by a phone call</li> </ul>	<ul style="list-style-type: none"> <li>• Listen</li> <li>• Sharing experienced</li> <li>• Express feelings</li> <li>• Answear the question</li> <li>• Participate in group actively</li> <li>• Take a decision from the discussion</li> </ul>
Session 3/stage 1/day 42	1.To increase skill and ability regarding practicing the intervention program  2.To examine the mindfulness levels	-Notebook -Booklet -Self-report form -MP3 -Instruments	15 min/ hospital	<b>Islamic caring relationship</b> <ul style="list-style-type: none"> <li>• Say “Assalamu’alaikum” as a greeting in Islamic way to the participant to make a good relationship</li> <li>• Support the patients and family with showing respect in Islamic way (e.g. compassion)</li> <li>• Giving the attention and concern are using touch in Islamic way</li> <li>• Praying (du’a) together with the patients for healing.</li> <li>• Facilitate the patient to pray and meditation.</li> <li>• Encourage the patients and their families to be patient with the illness and risk of death by praying and asking help from Allah</li> <li>• Facilitate the family to read Al Quran, and pray for patient</li> </ul>	<ul style="list-style-type: none"> <li>• Listen</li> <li>• Answear the question</li> <li>• Practice the prayer and breath dzikr meditation</li> </ul>

Session/ Stage/ day	Objectives	Medias	Duratio n/place	Action	
				Reseacher	Participants
			50 min/ hospital	<ul style="list-style-type: none"> <li>• Giving time and space for patient-family interaction</li> <li>• Providing healing environment: clean and quite</li> <li>• Check self monitoring</li> </ul>	
				<p><b>Individual Practice :</b></p> <ul style="list-style-type: none"> <li>• Ask the patients to do prayer (10 minutes)</li> <li>• Ask the patients to do breath dzikr meditation (30 minutes)</li> </ul>	
				<ul style="list-style-type: none"> <li>• Measure the level of mindfulness</li> </ul>	
Session 3/stage 2/day 42	1.To encourage the participants to reflect their feelings, physical, spiritual problems, as well as peace of their mind.  2.To	-Note book -Reflection guide -Recorded form -Self- report form -Instruments	10 min/ hospital          home	<p><b>Reflection:</b></p> <ul style="list-style-type: none"> <li>• Guide the patients to do the reflection</li> <li>• Ask the patient about their feelings regarding practicing the intervention program</li> <li>• Ask the patient about difficulties regarding practicing the intervention program</li> <li>• Assess the patient’s barriers during practicing the program</li> </ul>	<ul style="list-style-type: none"> <li>• Listen</li> <li>• Sharing experienced</li> <li>• Express feelings</li> <li>• Answer the question</li> <li>• Participate in group actively</li> <li>• Take a decision from the discussion</li> </ul>
				<ul style="list-style-type: none"> <li>• Encouraging the participants to maintain continuity of the Islamic-mindfulness practices after finish the program</li> <li>• Measuring the fourth post test within 48 to 72 hours after receiving the chemotherapy by a phone call</li> </ul>	

Session/ Stage/ day	Objectives	Medias	Duratio n/place	Action	
				Reseacher	Participants
	encourage the participants to maintain continuity of the Islamic- mindfulness practices				





**Guide Booklet**

**BREAST CANCER, PRAYER AND DZIKR**



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**2018**

Patient's Name ;  
Address :  
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### **Introduction**

This booklet aims to help patients with breast cancer to enhance their knowledge and skill during receiving treatment. When you're facing with a breast cancer diagnosis, knowledge is empowering. This guide is filled with valuable resources that will help you better manage your health problems and side effects of chemotherapy. Read on to learn more about the types of a breast cancer, recommended treatments, side effects and clinical trials, along with helpful tips and support resources for you, This guidebook consists of

#### **A. Breast Cancer**

1. What is the breast cancer?
2. Stages of breast cancer
3. Causes and risk factors
4. Treatment and its side effects
5. Symptoms management
6. How prayer and breath dzikr meditation is useful for advanced breast cancer?

#### **B. Prayer and Dzikr**

1. Prayer

2. What the Qur'an says about prayer?
3. Benefits of prayer
4. How to perform prayer for better results?
5. Dzikr
6. What the Qur'an says about dzikr?
7. Breath dzikr meditation
8. Benefits of breath dzikr meditation
9. How to do the breath dzikr meditation?
10. Du'a (supplication)

#### **A. Breast Cancer**

##### **What is the breast cancer?**

Breast cancer is the abnormal growth of the cells lining the breast lobules or ducts. These cells grow uncontrollably and have the potential to spread to other parts of the body. Both women and men can develop breast cancer, although breast cancer is rare in men.

Breast cancer is characterized by the uncontrolled growth of abnormal cells in the milk producing glands of the breast or in the passages (ducts) that deliver milk to the nipples.

##### **Stage of breast cancer**

There are three main stages of breast cancer:

- *Early stage*, which refers to cancer that is confined to the fatty tissue of the breast.

- **Locally advanced**, which has spread to underlying tissue of the chest wall.
- **Advanced or metastatic**, where the tumor has spread to other parts of the body. Approximately one third of breast cancer cases are diagnosed after the cancer has spread beyond the primary tumor site (metastasized).

### **Causes and risk factors**

There are a number of factors that have been shown to increase a woman's risk of developing breast cancer:

- **Age**: The majority of breast cancer cases occur in women over the age of 50.
- **Family history**: If a woman has a personal or family history of breast cancer, she is at increased risk of developing breast cancer.
- **Clinical history**: Women who have previously suffered with benign breast cancer are at greater risk of developing breast cancer in the future.
- **A late first pregnancy**: Women who have a late first pregnancy (after the age of 35) are more likely to develop breast cancer.
- **Prolonged hormonal exposure**: A long menstrual life or possibly use of hormone replacement therapy after the menopause expose women to an increased risk of developing breast cancer.
- **Lifestyle factors**: For example, being overweight or obese after the menopause, physical inactivity, a high fat diet and high alcohol consumption can play an important role in the development of breast cancer.

### Treatment and its side effect

Women with breast cancer may have one or more of these treatments:

Treatments	Side Effect
<ul style="list-style-type: none"> <li>• <b>Surgery</b> – Surgery is the most common treatment for breast cancer. The goal of surgery is to remove all the cancer from the breast. Many women are able to have surgery that removes the cancer, but leaves the breast intact. Other women may have their entire breast removed. Plastic surgery to rebuild the breast, called breast</li> </ul>	<ul style="list-style-type: none"> <li>• Soreness at the incision site and pain</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Radiation therapy</b> – High-energy x-rays or other types of radiation are used to kill cancer cells or keep them from growing.</li> </ul>	<ul style="list-style-type: none"> <li>• Fatigue, loss of appetite, skin changes and low blood cell counts.</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Chemotherapy</b> – Drugs are used to kill cancer cells or keep them from dividing.</li> </ul>	<ul style="list-style-type: none"> <li>• Hair loss, nail changes, mouth sores, low blood cell counts and risk of infection. Chemotherapy may also cause nausea, vomiting and changes in appetite.</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Hormone therapy</b> – The hormone estrogen causes some types of breast cancer to grow. Hormone therapy reduces the body's ability to make hormones or stops their action to keep cancer from growing.</li> </ul>	<ul style="list-style-type: none"> <li>• Fatigue, muscle and joint pains, vaginal dryness or discharge, hot flashes and mood swings.</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Targeted therapy</b> – Drugs or other substances are used to find and attack specific cancer cells without</li> </ul>	<ul style="list-style-type: none"> <li>• Most side effects of HER2-targeted</li> </ul>

Treatments	Side Effect
<p>harming normal cells. For many women, breast cancer does not come back after treatment. For some women, breast cancer comes back after a period of time when it could not be detected. This is called recurrent breast cancer. It may return close to the location of the original tumor or in another part of the body. Treatment options depend on where the cancer returned.</p>	<p>therapy such as pertuzumab (Perjeta) and trastuzumab (Herceptin) are mild, such as diarrhea. However, some drugs carry a risk of congestive heart failure, which usually goes away after the drug is no longer taken. Palbociclib (Ibrance) can cause low white counts and fatigue, while everolimus (Afinitor) can cause mouth sores, fatigue and lung inflammation.</p>

### Symptom management

Symptom	Activity
Loss of appetite	Light exercise before mealtime (if you able) may help increase appetite
Unwanted weight loss	<ul style="list-style-type: none"> <li>• Eat small, frequent meals and snacks every few hours throughout the day.</li> <li>• Try not to snack too close to meal times to avoid feeling too full</li> </ul>

Symptom	Activity
	<p>for meals.</p> <ul style="list-style-type: none"> <li>• Limit fluids at meals, but drink plenty of fluids at other times.</li> <li>• Take high calorie snacks with you when on the go.</li> <li>• Eat your favorite foods more often.</li> <li>• Sip on homemade smoothies, milk shakes or prepared liquid supplement drinks (such as Ensure and Boost)</li> </ul>
Nausea	<ul style="list-style-type: none"> <li>• Eat 4-6 small meals (instead of larger meals) each day.</li> <li>• Try ginger tea, ginger ale or crystallized ginger, or add fresh ginger when you are cooking.</li> <li>• Drink lemonade or lemon water.</li> <li>• Eat bland, easy-to-digest foods that do not have an odor.</li> <li>• Eat cool or frozen foods. These may have fewer odors than warmer foods.</li> <li>• Avoid foods that are spicy, fried, very greasy or very sweet.</li> <li>• Cook and freeze meals to reheat during times when you feel nauseous. Reheating causes fewer odors than cooking.</li> <li>• Open the windows when possible to keep fresh air flowing. Use an overhead fan to decrease cooking odors.</li> <li>• Take walks (when you are able) to get fresh air.</li> </ul>
Fatigue	<ul style="list-style-type: none"> <li>• Exercising (if you are able). Even exercises done while sitting down</li> <li>• Engage in low-impact exercise daily</li> <li>• Take brief naps early in the day</li> <li>• Establish a bedtime routine: go to bed and get up at the same time each day</li> </ul>
Pain	<ul style="list-style-type: none"> <li>• Take your pain medication as prescribed</li> <li>• Keep track of your pain levels through a pain diary.</li> <li>• Distract yourself with music, hobbies, or television.</li> <li>• Try positioning yourself with pillows to relieve some pain</li> </ul>

**How prayer and breath dzikr meditation is useful for advanced breast cancer patients?**

No person should have to face breast cancer alone. Talking to others with breast cancer can help you learn more about the disease, treatment options, resources and how to cope. As well as using spiritual religious practices to manage physical-psychological and spiritual distress can help you to improve well-being.

Nowadays, spirituality can be an important part of living with your diagnosis and bringing you a sense of peace. The faith in spirituality, along with religious forces, such as prayer and meditation, have an important role in disease acceptance, so, it can reduce depression and mental illness and improve the physical-psychological conditions. Hence, a connectedness between the patient and supreme God is facilitated. The well connectedness with God is created when the total surrender to God is developed as a consequence of prayer and breath dzikr meditation practice. The strong relationship with the high power can help improve the psycho-spiritual health and reduce fatigue. Through the practicing of prayer and breath dzikr meditation, the patient will experience calmness, peaceful described as completely surrender to God. With the stage of peaceful mind, the patients are more aware of their life situation, understand about the truth, and react with the reality in a more appropriate way based on the Islamic culture.



**B. PRAYER AND DZIKR****Prayer**

Prayer is at once an external and an internal practice: a set of physical exercises, and the richest spiritual nourishment. The prayer is done by assuming eight separate positions of the body and reciting various Qur'anic verses with each posture.

### **What the Qur'an says about prayer?**

Surely I am Allah there is no god besides Me; so worship Me alone;  
and establish prayer to remember Me (Qur'an. 20:14).

This is the Book in which there is no doubt, a guidance for those who  
have taqwa; who believe in the unseen, and who establish prayer, and  
spend out of what We have provided for them

(Qur'an, 2: 2-3).

Seek help with patience and prayer; it is indeed hard, except to those  
who are humble

(Qur'an 2: 45).

I have not created the jinn and humankind for any other purpose except  
that they should worship Me (Qur'an 51: 56).

Pray to me and I will hear your prayer

(Qur'an 40:60).

### **Benefits of prayer**

Prayer is not only religious obligations of Muslims but also have additional dreamlike power which can improve our daily life magically. If you already do pray every day, then surely you have started to feel the benefits of prayer, such as, prayer restrains our body from many diseases such as mental illness, anxiety disorder, fatigue, neurological disease, etc. Due to make mind calm down. In addition, when we do prayer, exercise also done at the same time, which increases blood flow to the body, provides energy, improves the body fitness and increases the immunity of disease. Moreover, regular prayer helps us to walk on the right path. Furthermore, prayer will improve the strengthen relationship with our Creator, thus raising your spiritual status, receive spiritual guidance and divine inspiration, purification of the

soul by constantly remembering God, a way to express gratitude towards Allah, obtain mercy and forgiveness from Allah.

### **How to perform prayer for better results?**

Prayer is a form of a mild exercise. It involves **movements of all body parts** and some such **unusual movements** that we normally don't make during routine course of the day. However, prayer is not enough just movement, but also must be done with slowly, quietly, as well as concentration of the mind focusing only on God

Health benefits only come if the actions of prayer are done **EXACTLY** the way they have been ordered by Allah and our Prophet Muhammad (PBUH). Inaccurate or hurried approach can lead to more problem than benefits (e.g., inaccurate bending during bowing can damage the backbone).

In addition, prayer also needing **FULL CONCENTRATIONS**, one cannot afford to think of anything else. It's Allah you see, it's Allah who is listening to you, it's Allah who is watching you, no gathering or meeting can be more important than this.

The Holy Prophet (PBUH) said "When you perform prayer, think that you are **standing** in front of God and **seeing Him with your eyes**. And if it is not possible for you to see Him, at least think that Allah is seeing you" (Hadits Bukhari).

Also, the prophet (PBUH) said "whoever offers all his prayer on time after a perfect ablution, stands with **humility and reverence**, prostrates and bows with calm, and offers the entire prayer in good manner. So that prayer becomes a radiating one and prays for him/her.

In other hand, The Prophet (PBUH) said “The one who commits the **worst theft** is he/she who steals from his/her prayer”.

When asked how one could steal from his prayer, PBUH replied: “By not performing his/her **bowing** and **prostration** perfectly” (Hadits Imam Ahmad & Tabrani).

Hence, these positions are necessary when one performs prayer. We can explain that bowing has beneficial effects, such as, due to fully stretches the muscles of the lower back, thighs and calves. Blood is pumped into the upper torso. Tones muscles of stomach, abdomen and kidneys. Over time, this posture **improves the personality, generating sweat kindness and inner harmony**. Likewise, the prostration has **a great psychological advantage**. It gives relief to the person concerned as life is full of worries and in this position one gets at least a transient refuge from the agonizing problems. Therefore, it can increase **patience** and **reliance** upon Allah Almighty, **spiritual** situations and **produce high psychic energy throughout body**. This posture of supreme submission and humility is the essence of worship.

So, it must be noted that the beneficial effects of prayer only come with **correct & exact practice of prayers with regularity and concentrations**.

### ***Dzikir***

*Dzikir* can be defined as follows:

- Remembrance of Allah in the heart (and or heart and tongue), so, guide you to connect to God.

- Make you feel calm, peace, relax, and sense of serenity.
- Serenity of relaxation is a form of psychological adaptation that will affect the physiological in reducing fatigue.

**What the Qur'an says about *dzikr*?**

- So therefore remember Me, and I will remember you:  
and be thankful to Me and do not be ungrateful  
(Qur'an 2:152).
- Those who believe and whose hearts find peace in the remembrance  
of Allah: verily in the remembrance  
of Allah do hearts find peace (Qur'an 13:28).
- They alone are true believes whose hearts are deeply  
moven when they hear Allah name and whose faith is strengthened when its  
law is communicated  
to them (Qur'an 8:2).

**Breath *dzikr* meditation**

Breath *dzikr* meditation is a method of *dzikr* with the rhythm of inhaling-exhaling through the nasal cavity to the lungs and then exhaling through nasal cavity again. When inhaling, the heart's *dzikr*, *Huu* (which means: He, God), and when exhaling, heart's *dzikr*, *Allah*, (God). *Huu Allah* can replace with others word such as *Yaa Allah*, *Subhanallah*, or *Asma'ul Husna* (Beautiful name of Allah).

### **Benefits breath *dzikr* meditation**

Breath *dzikr* meditation is a form of passivity or resignation by using words repeated regularly, that induces relaxation through the feeling of serenity. The relaxation response is integrated with faith. This method can lead us into a deeper level of relaxation.

With all this, it is expected that this breath *dzikr* meditation can lead the subject to the transcendental nature. Transcendental nature would provide a different state, an altered state of consciousness, where the state of consciousness will as well change the state of mind and state of emotion.

In this condition, if continued with the resignation, it will result in an extraordinary spiritual state, because to approach God cannot be obtained except through total self-surrender to Him. In one of the Hadits of the Prophet, it is said that self-surrender is the closest state of being between man and God.

Self-surrender can be described as an attitude of total submission to the transcendent object, that is God Almighty. With this attitude, whatever happens within oneself can be accepted without reservation; thus, it is very effective to induce passivity. To practice good relaxation with *dzikr* can obtain a positive effect of serenity and freedom burdens due to excessive stress.

In essence, *dzikr* relaxation requires us to be able to enter into a state of mind of submission to the Creator. Because, as we enter into resignation, we will be fully conscious of God. The more we can feel resigned and willingly accept the disease that we experience, the rest of the body will be in harmony to accept it in serenity. It will create a sense of relaxation and finally find a peace of mind. Ultimately, it will

provide the ability to control emotions, think more rationally, and calmness, in turn, enhances psycho-spiritual well-being and reduce fatigue.

**How to do the breath *dzikr* meditation?**

- Take a comfortable sitting position, closing eyes, relax of muscle
- Read *Basmallah*, creed, and *istighfar* (forgiveness), then continue with *shalawat*. This reading is not *mantra*. The goal of this reading is to direct our soul to God. Begin to pay attention to the breathing rhythm,
- Then followed with breath *dzikr* using *Huu Allah*, or *subhanallah*, or the Beautiful name of Allah (*Asma'ul Husna*)
- To close, offer everything that has been done to God and conclude the whole process with reading the *Hamdallah* and *shalawat* (blessing) to the Prophet Muhammad.
- You can do the breath *dzikr* meditation around 30 minutes, twice daily.

### **Du'a (supplication)**

Allah please give us the strength & courage to offer our prayers and dzikr in the best possible manner as per the Sunnah of our Prophet (PBUH)

Please heal us from the disease. Give us patience. Please also enable us to live our life as per Qur'an & Sunnah.

Protect us from the punishment of grave and the fire of hell. Please take us, our parents and our children to Jannah. Aamiin



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## APPENDIX F

### List of Expert

Five experts examine the construct and cultural applicability for the Islamic caring mindfulness-based program, they were:

	Name	Institute
1.	Assoc. Prof. Tuti Pahria, S.Kp., M.Health., PhD.	Department of Medical and Surgical, Universitas Padjadjaran, Indonesia
2.	Assoc. Prof. Dr. Laili Rahayuwati, MSc., MAE	Department of Community Health Nursing, Universitas Padjadjaran, Indonesia
3.	Assist. Prof. Dr. Wipa Sae-Sia	Department of Medical, Prince of Songkhla, University, Thailand
4.	Assist. Prof. Dr. Sopen Chunuan	Department of Obstetrics, Gynecologic Nursing and Midwifery, Prince of Songkhla University, Thailand
5.	Mardiyono, BSN., MNS., PhD.	Lecturer in School of Nursing, Department of Nursing, Health Polytechnics of Semarang, Indonesia

**APPENDIX G**

**Institutional Review Board**



Certificate of Approval of Human Research Ethics  
Center for Social and Behavioral Sciences Institutional Review Board,  
Prince of Songkla University

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Document Number: 2017 NST – Qn 054

Research Title: The effects of Islamic caring mindfulness-based program on psychological and spiritual well-being, and fatigue in Indonesian Women with Advanced Breast Cancer (ABC)

Research Code: PSU IRB 2017 – NST 047

Principal Investigator: Maria Komariah

Workplace: Doctoral Program of Nursing Science (International Program)  
Faculty of Nursing, Prince of Songkla University

Approved Document: 1. Human Subjects  
2. Instrument  
3. Invitation and Informed Consent

Approved Date: 15 January 2018

Expiration Date: 15 January 2020

The Research Ethics Review of Center for Social and Behavioral Sciences Institutional Review Board, Prince of Songkla University approved for Ethics of this research in accordance with Declaration of Belmont.

.....

(Assoc. Prof. Dr. Aranya Chaowalit)

Committee Chairman of Center for Social and Behavioral Sciences  
Institutional Review Board, Prince of Songkla University

## APPENDIX H

### Instrument Permissions

1. The Functional Assessment of Chronic Illness Therapy (Spiritual)- FACIT-Sp
2. The Functional Assessment of Chronic Illness Therapy (Fatigue)- FACIT-F
3. The Assessment of Khushu Prayer Questionnaire (AKPQ)
4. MP3 for guiding breath *dzikr* meditation



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Issued on: November 14, 2017

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## SURAT IJIN PENGGUNAAN INSTRUMENT PENELITIAN

Saya yang bertanda tangan di bawah ini:

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 Jabatan : Ketua Yayasan Solo Spirit Islam, Penggagas Dzikir Nafas, Dosen  
 Fakultas Psikologi Universitas Muhammadiyah Surakarta,  
 Indonesia

Menyatakan bahwa benar mahasiswi Program Doktor di Prince of Songkhla University, dengan identitas:

Nama : Maria Komariah  
 Judul Penelitian : "Effects of Islamic Caring Mindfulness-based Program on  
 Spiritual Well-Being and Fatigue in Indonesian Women with  
 Advanced Breast Cancer Undergoing Chemotherapy:  
 A Randomized Control Trial"

Telah meminta ijin kepada saya untuk menggunakan "Kuesioner Skala Kekhusyuan Salat" yang telah saya susun. Oleh karena itu, melalui surat pernyataan ini, saya menyatakan telah menyetujui permohonan Maria Komariah untuk menggunakan skala tersebut guna kepentingan penelitian dengan judul penelitian yang tertera di atas.

Surakarta, 12 Januari 2018

Hormat Saya

  
  
 Setiyo Purwanto, S.Psi., M.Si.  
 DZIKIR NAFAS

## SURAT IJIN PENGGUNAAN MP3 PANDUAN DZIKIR NAFAS

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 Indonesia

Menyatakan bahwa benar mahasiswi Program Doktor di Prince of Songkhla University, dengan identitas:

Nama : Maria Komariah  
 Judul Penelitian : "Effects of Islamic Caring Mindfulness-based Program on  
 Spiritual Well-Being and Fatigue in Indonesian Women with  
 Advanced Breast Cancer Undergoing Chemotherapy:  
 A Randomized Control Trial"

Telah meminta ijin kepada saya untuk menggunakan "MP3 Panduan Dzikir Nafas" yang telah saya buat. Oleh karena itu, melalui surat pernyataan ini, saya menyatakan telah menyetujui permohonan Maria Komariah untuk menggunakan panduan tersebut guna kepentingan penelitian dengan judul penelitian yang tertera di atas.

Surakarta, 12 Januari 2018

Hormat Saya,



Setiyo Purwanto, S.Psi., M.Si



## APPENDIX I

### Self-Report Daily Practice

No Participants	Compliance following the program day 1-21 (%)	Compliance following the program day 22-42 (%)
1	95	100
2	92	100
3	100	100
4	95	95
5	95	95
6	85	85
7	100	100
8	100	100
9	82	82
10	100	100
11	90	90
12	100	100
13	83	83
14	33	70
15	80	80
16	100	100
17	100	100
18	90	90
19	70	90
20	100	100
21	74	95
22	100	100
23	100	100
24	90	90

<b>No Participants</b>	<b>Compliance following the program day 1-21 (%)</b>	<b>Compliance following the program day 22-42 (%)</b>
25	78	92
26	75	90
27	100	100
28	72	95
29	100	100
30	100	100
31	100	100
32	90	100
33	90	90
34	100	100
35	90	90
36	90	90
37	100	100
38	100	100
39	95	95
40	80	80
41	100	100
42	80	80
43	85	85
44	70	95
45	72	80
46	100	100
47	60	70
48	100	100
49	66	75
50	80	80
51	100	100
52	75	80

<b>No Participants</b>	<b>Compliance following the program day 1-21 (%)</b>	<b>Compliance following the program day 22-42 (%)</b>
53	90	95
Average	88.53	92.59

## VITAE

**Name** Mrs. Maria Komariah

**Student ID** 5710430009

### Education attainment

Degree	Name of Institution	Year of Graduation
Diploma of Nursing	Ministry of Health, Indonesia	1993
Bachelor of Nursing	University of Padjadjaran, Indonesia	1998
Master of Biomedical Science	University of Padjadjaran, Indonesia	2009

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**List of Publication**

Komariah, M. (2014). A study on spiritual needs of advanced cancer patients.

*Humanities and Social Science Review*, 3(2): 283-292.

**International Nursing Conference**

Komariah, M., Hatthakit, U., & Boonyoung, N. (2017). Islamic mindfulness for nursing practice: A literature review. Poster presentation at The Sigma Theta Tau International Honor Society of Nursing, Phi Omega-at-Large Chapter, "Toward Nursing Leadership in Thailand 4.0 Era", November 9-10, 2017, Bangkok, Thailand

Komariah, M., Hatthakit, U., & Boonyoung, N. (2018). The Cognitive and Affective Mindfulness Scale of Indonesian Patients with Advanced Breast Cancer Undergoing Chemotherapy. Poster presentation at The 6<sup>th</sup> Padjadjaran International Nursing Conference, "The Role of Nursing in advancing the quality of care through application of conceptual models in areas of nursing practices and health", May 23-24 2018, Bandung, West Java, Indonesia.