The Effect of Participatory Selected Music Intervention Model for Improving Quality of Life of Older Adult Cancer Patients Undergoing Chemotherapy: A Randomized Controlled Trial

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ผลของการใช้ดนตรีบำบัดแบบมีส่วนร่วมเพื่อพัฒนาคุณภาพชีวิตของผู้ป่วยสูงวัยโรคมะเร็งขณะได้รับการรักษาด้วยเคมีบำบัด

นางสาวนี ผุดผ่อง

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อุบัติการณ์ของโรคมะเร็งในปัจจุบันเพิ่มขึ้นตลอดทุกช่วงอายุและถือเป็นภาระสำคัญของโรคสำหรับคนอายุ 55 ปีขึ้นไป วัตถุประสงค์ของการศึกษาครั้งนี้คือ เพื่อศึกษาผลกระทบของโปรแกรมการมีส่วนร่วมในการเลือกเพลงในการเพิ่มคุณภาพชีวิตและลดภาวะซึมเศร้าในผู้ป่วยโรคมะเร็งสูงอายุที่ได้รับยาเคมีบำบัด การศึกษาครั้งนี้ เป็นการศึกษาเป็นโดยสุ่มทดลอง ผู้ป่วยจะถูกแบ่งเป็น 2 กลุ่มโดยใช้บล๊อค เพื่อแบ่งเป็นกลุ่มทดลองและกลุ่มควบคุม จำนวนกลุ่มตัวอย่างมีทั้งหมด 116 คน ที่ได้รับการรักษาด้วยเคมีบำบัด และได้รับและวินิจฉัยเป็นโรคมะเร็งลำไส้ใหญ่ มะเร็งปอดและมะเร็งเต้านม แบ่งเป็นกลุ่มทดลอง 58 คนและแบ่งเป็นกลุ่มควบคุม 58 คน ผู้ป่วยที่อยู่ในกลุ่มทดลองขณะที่ได้รับยาเคมีบำบัดจะได้รับการฟังเพลงโดยใช้หูฟัง 30-60 นาที ทั้งหมด 2 ครั้ง ผู้เข้าร่วมงานวิจัยทั้งกลุ่มทดลองและควบคุมจะได้รับแบบสอบถามประเมินคุณภาพชีวิต (FACT-G) และแบบสอบถามประเมินภาวะซึมเศร้า (TGDS) ก่อนและหลังให้เคมีบำบัด ทั้งหมด 4 ครั้ง วิเคราะห์ข้อมูลทั้งหมดโดยใช้ซอฟแวร์โปรแกรม SPSS, สถิติที่ใช้ ANOVA และ Chi-square tests และ สถิติพรรณนาอื่นๆ ผลการศึกษาพบว่า ผู้เข้าร่วมจำนวนสุดท้ายคือ 105 คน 51 เป็นผู้สูงอายุในกลุ่มที่ได้รับการฟังดนตรีและ 54 ในกลุ่มควบคุม ผลการศึกษาจาก repeated measures ANOVA พบความแตกต่างอย่างมีนัยสำคัญของคะแนนคุณภาพชีวิตและให้คะแนนภาวะซึมเศร้าของกลุ่มทดลองและควบคุม การเพิ่มคะแนนคุณภาพชีวิตและการลดคะแนนภาวะซึมเศร้าแตกต่างอย่างมีนัยสำคัญสำหรับกลุ่มทดลองมากกว่ากลุ่มควบคุม ($p < 0.05$) การใช้การฟังเพลงด้วยการเลือกในรูปแบบของการตั้งค่าเพลงปริมาณที่เหมาะสมและการควบคุมปัจจัยที่มีอิทธิพลอื่นๆ เป็นสิ่งจำเป็นสำหรับในการส่งเสริมคุณภาพชีวิตและความเป็นอยู่ที่ดีของผู้สูงอายุ

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Cancer is one of the world's most common diseases. The incidence of cancer increases progressively throughout the age span and is a major burden of disease for people aged 55 years and older. The objective of this study is to evaluate the effect of participatory selected music intervention model on quality of life and decreasing depression in older adult cancer patients undergoing chemotherapy. The study was a randomized controlled trial with randomly selected block sizes of 2. The sample groups of 116 patients were the new diagnosis of colorectal, lung and breast cancer or at the first and second time of chemotherapy. The study was taken place at Chemotherapy Unit, King Chulalongkorn Hospital. All 116 subjects were randomly assigned to received either music intervention (n = 58) or control group (n = 58). The patients listened to the music through headphones for 30-60 minutes during a chemotherapy treatment with a total of 2 sessions, and the control group was received a nursing care as usual. All participants were measured for pre-test questionnaires on the quality of life (FACT-G) and Thai Geriatric Depression Scale (TGDS) and post-test after their course of chemotherapy with four times of measurement. Data were analyzed using SPSS software through analysis of variance (ANOVA) and Chi-square tests and the descriptive statistic. The final sample consisted of 105 participants which were 51 older adults in the music group and 54 in the control group. The results were shown that a repeated measures ANOVA revealed a significant difference between groups on QOL score and depression score. The increasing of QOL score and the decreasing of depression score were significantly for those subjects who received music intervention than those subjects in the control group (P<.05). The music intervention (Listening Music) with an appropriate selection in the type of music preference, the right volume, and other influencing factors is required for desired consequences of music in promoting quality of life and well-being of older adults.

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Lastly, I would like to wholeheartedly thank my grandmother, grandfather, mother, father, Kunhachai and Pudpong family, Ms. Supang, Ms. Sununta and all my colleague from OR Bangkok Christian Hospital, staff of King Chulalongkorn hospital and all my friends for enduring supports and patience to allow me accomplishing this meaningful study and unfolding a new chapter of my life.

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CHAPTER I INTRODUCTION

1.1 BACKGROUND AND RATIONALE

Cancer is a leading cause of death with in top rate of the world. The World Health Organization found that in the year 2008, there were 12.7 million new cases of people who have died from cancer and approximately 7.6 million people representing 13% of deaths of people around the world. The number of deaths were found over the deaths from AIDS, tuberculosis and malaria combined.

Cancer is found in the top 5 ranking of the world including lung cancer, breast cancer, colon cancer and prostate cancer. Among the new patients of 12.7 million, they were common lung cancer (1.6 million), breast cancer (1.38 million), colorectal cancer (1.2 million people), intestine cancer (0.99 million people), and prostate cancer (0.90 million people). The number of deaths, 7.6 million people were found as 1.37 million people with lung cancer, 736,000 people with intestine cancer, 695,000 people with liver cancer, and 608,000 people for colon cancer, and 458,000 people with breast cancer.

The World Health Organization estimates that in 2030 cancer patients will increase to 21.4 million people, and estimates to have the death approximately 13 million people and about 70% of those deaths are in countries with moderate to low incomes (Cancer in Thailand vol VII, 2010-210).

The National Cancer Institute and the relevant organization revealed

the statistics of cancer from the record of 16 units nationwide that in the year of 2005 there were 98,852 new patients who were male 48,596 people and female found 50,256 people. The top 5 cancers in male were liver cancer, lung cancer, colon cancer, Prostate cancer, and leukemia. The top five most common cancers in women were breast cancer, liver cancer, cervical cancer, lung cancer and colon cancer (Cancer in Thailand vol VII, 2010-2012).

According to the data from the Bureau of Policy and Strategy in 2011, Thailand was reported that in the year of 2011 the deaths of cancer were approximately 61,082 people that were 35,437 male and 25,645 female. Cancer is held in the first rank of death, and it is likely to increase continuously. The top five first ranking of cancer that was found to be the cause of death in men were liver cancer, lung cancer, colon cancer, oral cancer and Leukemia, respectively. In female, the top five cancers that cause of death include liver cancer, lung cancer, breast cancer, cervical and colon cancer. It can be seen that cancer is a major problem of the country with the five first ranking of cancer including liver cancer, lung cancer, breast cancer, cervical cancer, and colorectal cancer, which were accounted for 56.38% of all cancers.

Cancer can cause of death, and it is the issue of the burden of disease that decreases the quality of life in Thai population. Since 1998, cancer has been holding in the first rank in the cause of death in Thai people. Cancer is a major public health problem in Thailand that cause of death. The rate of deaths per 100,000

people in 2007 to 2011 found that cancer was rated in the first rank followed by accidents and heart disease, respectively (Cancer in Thailand vol VII, 2010-2012).

The Bureau of Policy and Strategy, Ministry of Public Health also found that the incidence of cancer has been increasing, and the statistics show that the top 10 most common cancers found in males and females were liver cancer, lung cancer, colorectal cancer, breast cancer and cervical cancer (Cancer in Thailand vol VII, 2010-2012).

The overall incidence of cancer in Thailand is similar to the global population that has found the higher rates of the disease every year. Because there are many factors involved, one of them is increasing in age, and the risk of disease will increase. Current population lives longer because the disease controlling is better and the controlling of the mortality rate among newborns and children has been changed. Thailand society is entering to an aging society (60 years old) in the proportion of elderly, and it has been increasing steadily. Thai population has been rising, and by the year of 2005 the population in childhood (age less than 15 years old) was found a total of 14.3 million people (23 percent) and the elderly were found 6.4 million people (10.3 percent). In 2010, it was shown that the population of the childhood equivalent of 13.2 million people (20.7 percent), and in the elderly population was found an equal number of 7.5 (11.8 percent). In the year of 2035, it will be expected that population in childhood will decrease 9.1 million people (14.4 percent) and elderly population will be increasing 15.9 million people (25.1 percent).

According to the cancer record in hospital in 2011 patients with cancer that have been hospitalized with a total of 3341 people. Of those patients were found with age range 55-59 years old. 64.5% cancer patients were found in male and 52% were found in female. When compared the cancer patients in aged 0-54 years, it was found cancer in males 35.5% and 48% in females (cancer record in hospital, 2011). Moreover, from the cancer record in hospital in 2012 cancer patients that hospitalized with new admissions were found a total of 3917 people. When divided by age group, it was shown that a number of patients who have been newly hospitalized the most were found in age group 55-75 years old with a total of 2130 people which was very high compared with cancer patients aged 0-54 years with a new number of new cancer patients only (1787 people). In addition, patients whose age in the group of 55-75 years were found with the most common cancer ranked in first top three in men including liver cancer, lung cancer and colon cancer. The top three most common cancers in women were breast cancer, colon cancer, and lung cancer (Cancer in Thailand vol VII, 2010-2012).

The current incidence of cancer is likely rising and found to be in the second in ranking of the cause of death. It has been estimated that by 2030 the world population will have died from cancer 13.1 million people. The lung, intestine, liver, colon and breast cancer is a major cause of death (World Health Organization, 2010).

Cancer is one of the most common diseases that is found to be

increasing in the incidence rate and the risk of disease increases as along with age increase (Yanclik, R., and Ries, L.A, 2000; Wedding, 2007). According to the cancer data it was found that more than 50% of all new cases of cancer were found in the group aged of 55 years and over 60% of deaths were the most common among this population. In the past decade due to the change of the population in elderly people, the increasing number of elderly patients with cancer has also increased accordingly. The incidence of cancer is increasing strongly and this obviously affects the elderly population (Yanclik, R., and Ries, L.A, 2000; Wedding, 2007).

Deaths related to cancer were a rapidly increasing rate and found to be the most common in the elderly population with 55 years old or more. Moreover, cancer has become to be the major cause of death in this population (Yanclik, R., and Ries, L.A, 2000) while cardiovascular disease was declined. During the 20 years, cancer treatment has been progressed to reduce the rate of death among cancer patients. This progress of the patients under the age of 50 years has been successful in reducing the death rate. On the other hand, the death rate among the elderly from 55 years and over were not lower (Hurria A et al, 2011). In addition, the incidence of cancer increased throughout all ages, especially among the population aged 55 years or more. The increasing in the incidence of cancer rate has been rising along with the increasing in the elderly population. It is crucial that the world must realize and consider obviously regarding the cancer among elderly population (Hurria A et al, 2011).

Thailand also has been facing a rapid increase of the elderly population for more than three decades. Thai population situation is changing rapidly. As a result, the mortality and fertility have been changed the age structure of Thai population. Thai elderly was fully into aging society in the last 20-30 years. The number and proportion of population aged 60 years and over has increased continuously, and it is likely to increase rapidly in the future. Therefore, the prevalence of cancer patients is inevitable and it also has increased steadily for this change (Khuhaprema T et al, 2007).

From the statistics report of the cancer from the past can be seen that a number of new cancer patients have been increasing every year represents a promising cancer patients who received services will be increased in the future. In the age group of 55 years and above have a very high incidence of cancer compared to other age groups and tends to rise with age. Due to the transition to an aging society, the ratio of the elderly has been increasing. In the elderly, these are likely to be cancer more than among younger people even if no changes are made in the cause of disease in the area. This makes incidence rates of cancer be risen by a greater proportion of elderly each year (Cancer in Thailand Vol VII, 2007-2009). A report from hospital based cancer registry data revealed that since 2011 cancer was found the most in the central part of Thailand (51.9%) and Bangkok was in the first province that has the highest number of cancer patients (26.1%) followed by the North (9.7%), the Northeast (8.3%), and the South (4.0%), respectively (the hospital

based cancer registry data, 2011).

According to data from the National Cancer Institute found that patients with cancer were found the most common in the Bangkok. The new cancer patients who were hospitalized were 871 people (26.1%), and of these people found in male 338 patients (10.1%) and 533 were female patients (16%), followed by Nonthaburi and Samutprakan province (the hospital based cancer registry data, 2011). In addition, the age-standardized incidence rate in 2008 was found in the age group of 55-75 years, and in males ranged from 28.7 to 119.7 per 100,000 population and in women ranged from 32.6 to 119.8 per 100,000 population which a very high incidence of cancer in this age group. The most common cancers in men in the top three in Bangkok included liver cancer, lung cancer and colon cancer. The top three most common cancers in women were breast cancer, colon cancer and lung cancer (the hospital based cancer registry data, 2011).

Bangkok, capital city of Thailand located in the central part of the country as well as the center of politics, economy, culture, education, transportation and commercial hub. The standard of living with traffic congestion continues to be a major and important issue, which cause pollution and health problems (Cancer in Thailand Vol VII, 2007-2009). Bangkok also has the public hospitals where are held the best quality at the cancer center (National Cancer Institute). Chulalongkorn hospital, Siriraj hospital, Ramathibodi hospital, Queen Sirikit National Institute of Child Health, Rajvithi hospital, Vajira hospital, and Bhumibol Adulyadej hospital are the

nine institutes that hold the best center of cancer treatment in Bangkok, Thailand. The private hospitals also have the cancer center which are Bangkok hospital, Bumrungrad, and Samitivej hospital. However, data from the past was shown that more than half of patients were admitted to public hospitals rather than private. Health statistics have ranked Bangkok as the highest ranked in healthcare facilities. The ratio of population per doctor was 793:1 while in the other provinces and other regions in the country, the proportion of the population per physician was 6237:1. Therefore, Bangkok is regarded as an important foundation for collecting data on cancer patients and also cleaves significant for the patients with cancer (Cancer in Thailand Vol VII, 2007-2009).

King Chulalongkorn Hospital is hold for the top rank of hospital in Thailand that has the advancement in treatment and research in terms of medical care and being the major hospitals in the treatment of cancer. New data from cancer patients who receive chemotherapy treatment at the department on August 27, 2013 to March 17, 2015 have been found a total of 1853 patients and of these patients whose aged 55 years and over were found a total of 1180 people.

In 2010 to 2030 the forecasts of an increased rate of cancer among the elderly has been 67%, but when compared the increase rate of cancer in patients with adult, it increased only 11% (National Cancer Institute, 2007). The diagnosis of cancer in the elderly is often delayed compared with younger patients because elderly patients are more diverse than younger patients not only because of

a chronic disease, but also the other diseases associated with physical and mental disability issues. The general condition life is all these socio-economic impact assessment to diagnosis and more difficult to treat (Balducci, L., and Extermann, M, 2001). Moreover, with older structures and organs of the body were deteriorated and exposure to carcinogens for a long time. As a result, elderly are risk in cancer than those in other age groups (Krisanaprakornkit et al., 2010), so clinical practice is another important goal to be realized in cancer treatment in order to increase the quality of life among elderly; in addition to treat the symptoms of the disease (Balducci, L., and Extermann, M, 2001).

In this time and age, the treatment of elderly cancer patients in hospital is found in several ways including surgery, chemotherapy, radiotherapy or combination of several methods. However, the chemotherapy is commonly used. Elderly cancer patients have been added to the hospital treatment continued for several consecutive times. The chemotherapy at a time causes side effects such as gastrointestinal symptoms (38.8%) including nausea, vomiting, percent of the oral mucosa inflammation. The second was 38.3 percent affecting the arterial system including anemia, low white blood condition and Thrombocytopenia 3 resulting in the elderly cancer patients easily infected. In addition, malnutrition is a common condition found in elderly cancer patients: 37.3 percent in male and 25.1 percent in female. The elderly patients cannot help themselves and lost the ability to care for themselves (Vatanasapt P et al, 2008).

However, the side effects of chemotherapy were nausea, vomiting, anorexia (Krisanaprakornkit et al., 2010), and in most cancer patients malnutrition side effects affecting the quality of life of cancer patients. Treatment with chemotherapy is a highly effective treatment for cancer patients. The study of the past through the use of chemotherapy among cancer patients the elderly when compared with younger patients, the research found that elderly patients with cancer have more complications and unpleasant side effects from the chemotherapy than younger patients (TM Wildes, D. Kallogjeri, B. Powers, A. Vlahiotis, M. Mutch, EL Spitznagel Jr *et al*, 2010; H. Gaddipati, P. Fu, A. Dowlati, 2011). The effects of chemotherapy can affect quality of life, which is important for patients, especially in elderly patients because it influence to both physical and mental disabilities (Tchen N, Soubeyran P, Eghbali H *et at.*, 2002).

Quality of life is the recognition of the status in life and the context of the culture and values of residents, and it is associated with the target of social standards (WHOQOL, 1998). Quality of life is the extent to which individuals that can expect not to be affected by a condition or disease treatment, which include physical, social/family, emotional/mental well-being, and happiness of activities (cella, 1997). Consequently, it is very important to elderly patients, and it is necessary for hospitals to be deployed on the predictions and forecasts in the lives of patients with cancer by increasing the quality of life among this people. Since, it is more important than the patient survives (Wedding et al., 2007) because quality of

life is important to realize that the basis for the treatment of cancer patients, especially in the elderly. A recent study found that the quality of life of cancer patients is low when compared to elderly who do not have cancer (Wedding et al., 2007).

From previous research found that over 80% of patients with cancer using a standard form of treatment such as surgery, chemotherapy, medical and radiation with a combination of treatment (Yanclik, R., and Ries, L.A, 2000), which combines the most popular format including massage, Hypnosis and music therapy that is found to be effective in reducing the painful symptoms of the disease and enhance the quality of life and empowering cancer patients to cope suffering from a disease (Beck 1989; Cassileth 2003; Harper, 2001; Hilliard 2003; Robb 2008). The importance of education in the previous research found that using music in cancer patients has a positive rather than negative (Beck 1989; Cassileth 2003; Harper, 2001; Hilliard 2003; Robb 2008).

Since, music therapy has resulted in a positive mood enhancement, improved concentration and memory increased quality of life (Hilliard, 2003) caused mood changes (Burns, 2001 and Waldon, 2001) reduced psychological symptoms during treatment (Xie *et al*., 2001) increased happiness in life (Boldt, 1996 and Burns *et al*., 2001) increased the awareness of the reality (Boldt, 1996 and Burns et al., 2001) reduced anxiety, fear, and stress, and lowered blood pressure (Ferrer, 2007). The effect of music therapy has been recognized and confirmed by the experience

of cancer patients who use music therapy (O'Brien, 2010).

The majority of cancer patients in Thailand are 55 years and older, 64.5% of all cancers are diagnosed in persons 55 years or older (Cancer record in hospital, 2011). Rates of clinically significant depression are as high as 25 % in older adults, well above the general population (Wedding U, Koch A, Ro¨ hrig B, et al, 2007; Massie MJ, 2004). Due to the dynamic effect of mental and physical health, it can disturb social functions and quality of life in elderly. Depression is found to be highest (4.9%) in elderly compared to the other aged groups (United Nation Population Founds, 2008). Major depressive disorder (MDD) and depressive symptoms occur frequently in patients with cancer. Rates of major depressive disorder and depressive symptoms comorbid with cancer appear to be 20% to 50% (Astin, 1998).

Depression has a substantial impact on health in patients with comorbid medical conditions (Rosso AL, Eaton CB, Wallace R, et al,2013; Kane RL, Shamliyan T, Talley K, et al,2012; Mohile SG, Fan L, Reeve E, et al,2011) and is associated with increased symptom burden (e.g., pain, fatigue), decreased cognitive and physical functioning, decreased quality of life, impaired family functioning, decreased adherence to medical regimens and healthy behaviors, and potentially decreased immunity and increased mortality. People with depression can be noticed through expressing thoughts, by emotions and by behaviors. This principle controls people and stands as an essential key to lower depression in elderly, especially in cancer patients (Astin, 1998).

Depression is one of the most common reasons for using complementary and alternative therapies (Ernst, Rand, & Stevinson, 1998). Depression is among the 10 most frequent indications for using alternative therapies, and music is one of the remedies for this condition (United Nation Population Founds, 2008). Moreover, previous study found that, the therapeutic effect of music on depression. Each found that music had beneficial effects (Chung, 1992; Hanser & Thompson, 1994; Lai, 1999).

The lifetime risk of developing any type of cancer is 44% for men and 38% for women (NCI 2010) and a diagnosis of cancer may result in extensive emotional, physical and social suffering. Many symptoms and treatment side effects impact on the physical well-being as well as the quality of life (QoL) of the cancer patient, including appetite disturbance, difficulty swallowing, nausea, vomiting, constipation, diarrhea, dyspnea or difficulty breathing, fatigue, insomnia, muscle weakness and numbness (King 2003). In addition, study findings clearly indicate that cancer patients experience elevated levels of psychological distress (Duivenvoorden 1997; Norton 2004; Sellick 1999) and depression (Massie 2004; Parle 1996; Raison 2003) in response to diagnosis and treatment. The actual experience of chemotherapy induced side effects, such as nausea and vomiting, and their influence on psychological well-being varies widely in patients receiving the same cytotoxic agents. This suggests that non-pharmacological factors possibly play an important role in how patients experience or interpret physical symptoms during the treatment

phase (Montgomery 2000; Thune-Boyle 2006).

Music is known to affect the individual by sympathetic resonance. Based on a psychophysiological theory synthesized from the literature, certain type of music induces relaxation and responses (Lai & Good, 2002), which reduce activity in the neuroendocrine and sympathetic nervous systems, resulting in decreased anxiety, heart rate, respiratory rate, and blood pressure (Good, Stanton-Hicks, Grass, Anderson, Choi, Schoolmeesters, & Salman, 1999; Standley, 1986; Zimmerman, Pierson & Marker, 1988). Music has been found to increase circulating endorphin (Mockel, Rocker, Stork, Vollert, Danne, Eichstadt, Muller, & Hochrein, 1994), which is associated with moods (Gerra, Zaimovic, Franchini, Palladino, Guicastro, Reali, Maestri, Caccavari, Delsignore, & Brambilla, 1998). Thus, a music intervention was expected to improve depression. Addressing music selection is important when conducting music intervention. Music preference plays a large role because people generally like what they know and dislike the unfamiliar (Lai & Good, 2002).

Music Therapy is the science that deals with navigation, music or other elements of musical applications to modify, develop and maintain physical, mental, emotional, and social health of the characteristics of the sound that has been organized in an orderly way. A clear pattern and structure affects the body, mind and brain function. In many aspects of the study it has been shown the effect of music on the body that can cause changes respiration rate, pulse rate, blood pressure, the response of the diaphragm, the muscle tone, and the blood flow. The effects of

music on the mind and brain can cause a change of mood, consciousness, imagination, perception, reality, and communication as verbal language (Na Cholburi JS, 2004).

From the review of the literature, the use of music therapy in cancer patients undergoing chemotherapy affect physical, mental, emotional, and the body of the patient. Music therapy in cancer patients can help reduce pain from various causes, improve respiratory rate relieve nausea and vomiting, feel comfortable and relax the muscle (Aldridge, 2003; Bunt & Hoskyns, 2002; Burns, Harbuz, Hucklebridge, & Bunt, 2001; Hilliard, 2003; Kruse, 2003; Porchet-Munro, 1995; Rider, 1987; Standley, 1995). Music therapy in cancer patients can also help ease tensions, reduce anxiety and depression, and reducing inappropriate behavior. Moreover, bringing music therapy used in cancer patients can develop social skills that patient's courage to face the agony and build a good relationship with the family and society. The use of music therapy in cancer patients can also improve quality of life for patients with cancer (Liao J *et al*., 2011; Xiang CY et al, 2006; Bardi J *et al.*, 2011; Bruce A and Boston P, 2008). Thus, the use of music therapy is a combination of treatment used with current treatments. This treatment can be done in conjunction with chemotherapy, so cancer patients receive the most benefit, especially focusing on the psychological, social and spiritual health of elderly patients holistically.

From the review of the literature, the use of music therapy to patients with cancer such as the effect of music for medical use in adults and

children cancer patients to reduce anxiety before or during surgery (Burns 2001), the use of music to reduce stress during chemotherapy or radiation treatment (Clark 2006, Weber 1996), reduce the effects of medical treatment (Frank 1985), develop emotional (Bailey 1983; Burns 2001), strengthen the management of pain (a combo in 2006, Beck 1989), improve the immune system (Burns, 2001 and Camprubi DA, 1999) and quality of life (Burns 2001 Hilliard, 2003). The results are summarized and agreed that music therapy has an effect on the development, rehabilitation in patients for body, mind and soul. This results in a better in quality of life among patients.

From the review, it suggests that Thailand has never had the study in music therapy to older cancer patients while undergoing chemotherapy. Even in foreign countries has also less studies "The use of music therapy for elderly cancer patients while receiving chemotherapy." If this research can succeed, it will be considered the first research of Thailand in the field of music therapy. This project can be applied to a holistic and interdisciplinary research, the anatomical sciences, anthropology of music, and behavioral sciences, etc.

Thailand is one of the country that is increasing is a population of elderly. Almost half of the elderly are living with chronic diseases, especially serious disease such as cancer. The treatment of cancer is common with the chemotherapy treat. This is to destroy or stop the growth of cancer cells and to heal cancer, and relieve metastatic. It still needs to treat patients by receiving medication for a long

time about 3- 4 hours. The elderly who underwent treatment in a mental state is often depressed and feel anxiety and pain simultaneously resulting in a lower quality of life. Researcher has hypothesized that using music to help the treatment seems to be effective for improving the quality of life among elderly patients in this group because there are a number of research studies have shown that music therapy helps restore quality of life for patients who are receiving treatment with chemotherapy. This study aims to 1) study the kind of music that will be used for the musical events treatment to the elderly during the treatment with chemotherapy and 2) use musical events treatment on quality of life. The concept of activity-based listening music data is collecting in both quantitative and qualitative study. The results are expected to be: 1) music education that is appropriate to the needs of cancer patients to be used in musical activities and treatment 2) using of music therapy form listening in restoring the quality of life and decrease depression of elderly cancer patients currently treated with chemotherapy.

When this research is finished, the research will be published in the Journal of Music Therapy. Another benefit is bringing the science of music therapy applications in the treatment of patients in hospital. This causes of the potential medical in Thailand, and will also benefit to the society as well as to extend to regional further to restore the quality of life for elderly citizens in Thailand who are sick with cancer to have a better quality of life further.

Knowledge Gap

There are several music therapy and music intervention projects applying in Thailand but in this age group music that in the activity cannot choose the song for listening undergoing chemotherapy. Previous studies mentioned that music preference and the perceived importance of music in the lives of participants may influence the response to music-listening interventions. Music preference is determined by culture and environment. In order to provide patients with their music preferences, numerous studies have asked a variety of patients to pick their preferred music. Music interventions involving music listening may use researcher-selected music or patient-selected music, but patient preference must be taken into account (Huang, 2006)

1.2 RESEARCH QUESTION

1.2.1 Does the participatory selected music intervention model improve the quality of life among older adult cancer patients undergoing Chemotherapy?

1.2.1 Does the participatory selected music intervention model decrease depression among older adult cancer patients undergoing Chemotherapy?

1.3 RESEARCH OBJECTIVES

1.3.1 To develop participatory selected music intervention model for older adult cancer patients undergoing Chemotherapy.

1.3.2 To evaluate the effect of participatory selected music intervention

model for improving the quality of life among older adult cancer patients undergoing Chemotherapy.

1.3.3 To evaluate the effect of participatory selected music intervention model for decreasing depression among older adult cancer patients undergoing Chemotherapy.

1.4 RESEARCH HYPOTHESIS

1.4.1 Null Hypothesis:

1.4.1.1 The quality of life among older adult and elderly cancer patients undergoing Chemotherapy is not different within the experimental group and control group.

1.4.1.2 Depression among older adult and elderly cancer patients undergoing Chemotherapy is not different within the experimental group and control group.

1.4.2 Alternative Hypothesis:

1.4.2.1 The quality of life among older adult and elderly cancer patients undergoing Chemotherapy is different within the experimental group and control group.

1.4.2.2 Depression among older adult and elderly cancer patients undergoing Chemotherapy is different within the experimental group and control group.

1.5 OPERATIONAL DEFINITIONS

Participatory selected music intervention model: The meaning in this research is that music or other elements of musical applications to modify, develop and maintain physical, mental, emotional wellbeing and society. Music therapist will be an operator to set goals through various musical activities and structured rules and regulations.

- ***Music that will be used in the activity will be the song which the older adult in the intervention group will have the opportunity to choose the song separately with their music preference for example name of the song, name of artist and style of the song by themselves.***
- This music preference of each patient will be arranged by music therapist in order to create the song list for each patient preference.
- The research and intervention will be designed to be appropriated for older people with cancer following the *music therapy activities* (Binson, 2010). *1). Study the background of the therapy. 2). Diagnostics to treatment planning. 3). Treatment Plan. 4).The practice sessions (music therapy activities). 5). Evaluating and monitoring the therapy.*
- The music therapy resulted in a change in the rhythm of the body such as heart rate, breathing and muscle function, and the mood. It can

reduced anxiety behaviors, reduce anxiety, reduce pain, reduce stress, and help distract and calm. This is the ideal for elderly cancer patients receiving chemotherapy.

Quality of life: means to recognize the extent to which expectations have not been affected by the disease or condition being treated while elderly cancer patients are receiving chemotherapy by covering the body well-being, emotional/ mental happiness and practical activities. This changes to the health status of the concept of Cella (1997), which are described as following.

Physical well-being refers to the elderly cancer patients undergoing chemotherapy, as perceived by the patient's own body.

Social/family well-being refers to elderly cancer patients receiving chemotherapy perceive care or support from family members who intimate with the patient.

Psychological well-being means as elderly cancer patients receiving chemotherapy have the awareness of the illness, such as anxiety in their illness.

Activity well-being in the practice of activities means that cancer patients undergoing chemotherapy perceive efficacy in practice desirable or the ability of the patient to accept the illness.

The quality of life of elderly cancer patients receive chemotherapy as a measure of quality of life for cancer patients General (FACT-G: Thai Forth version which was translated by Ratanatharathorn V, Sirilerttrakul S, Jirajarus M, Silpakit C,

Maneechavakajorn J, Sailamai P, et al, 2001). The score of quality of life while elderly cancer patients are receiving chemotherapy interpret by the total score. If the mean total score of elderly cancer patients currently receiving chemotherapy is high, it means that they have a better quality of life.

Depression*:* Is defined as a continuum of unpleasant emotional experiences of a psychological, social, or spiritual nature that interferes in the ability to effectively cope with cancer, symptoms, and treatments (NCCN, 2010). Depression was measure by using Thai Geriatric Depression Scale (TGDS).

Older adult cancer patients receiving chemotherapy means the patients aged 55-75 years both male and female who have been new diagnostic by doctor that had the colon and rectum cancer, lung cancer and breast cancer received chemotherapy in the chemotherapy unit at Chulalongkorn Hospital.

1.6 THE SCOPE OF THE STUDY

This research is a randomized controlled trial, pre-posttest designed and the randomly selected sample by block of 2 randomization. The samples were divided into an experimental group and a control group at the cancer research in an outpatient (OPD case) chemotherapy unit, Chulalongkorn Hospital with a new cancer patient cases who have been diagnosed with cancer of colon and rectum, lung, and breast cancer aged 55-75 years who were received chemotherapy. The participants were needed at least two sessions of chemotherapy treatment. This study was use

the survey to collect data. The surveys of the preferences in types of music was access to create a program to listen to music (Music Listening Program) and the quality of life for cancer patients by FACT-G: Thai version with Thai Geriatric Depression Scale (TGDS) to detect depression in older adult cancer patients.

1.7 EXPECTED OR ANTICIPATED BENEFIT GAIN

1. Knowledge of the musical events among the elderly patients treated with chemotherapy as a cancer treatment.

2. The participation of medical personnel, teachers and students working together in multidisciplinary research on music therapy for improving the quality of life of elderly patients with cancer while they are receiving chemotherapy treatment.

1.8 CONCEPTUAL FRAMEWORK

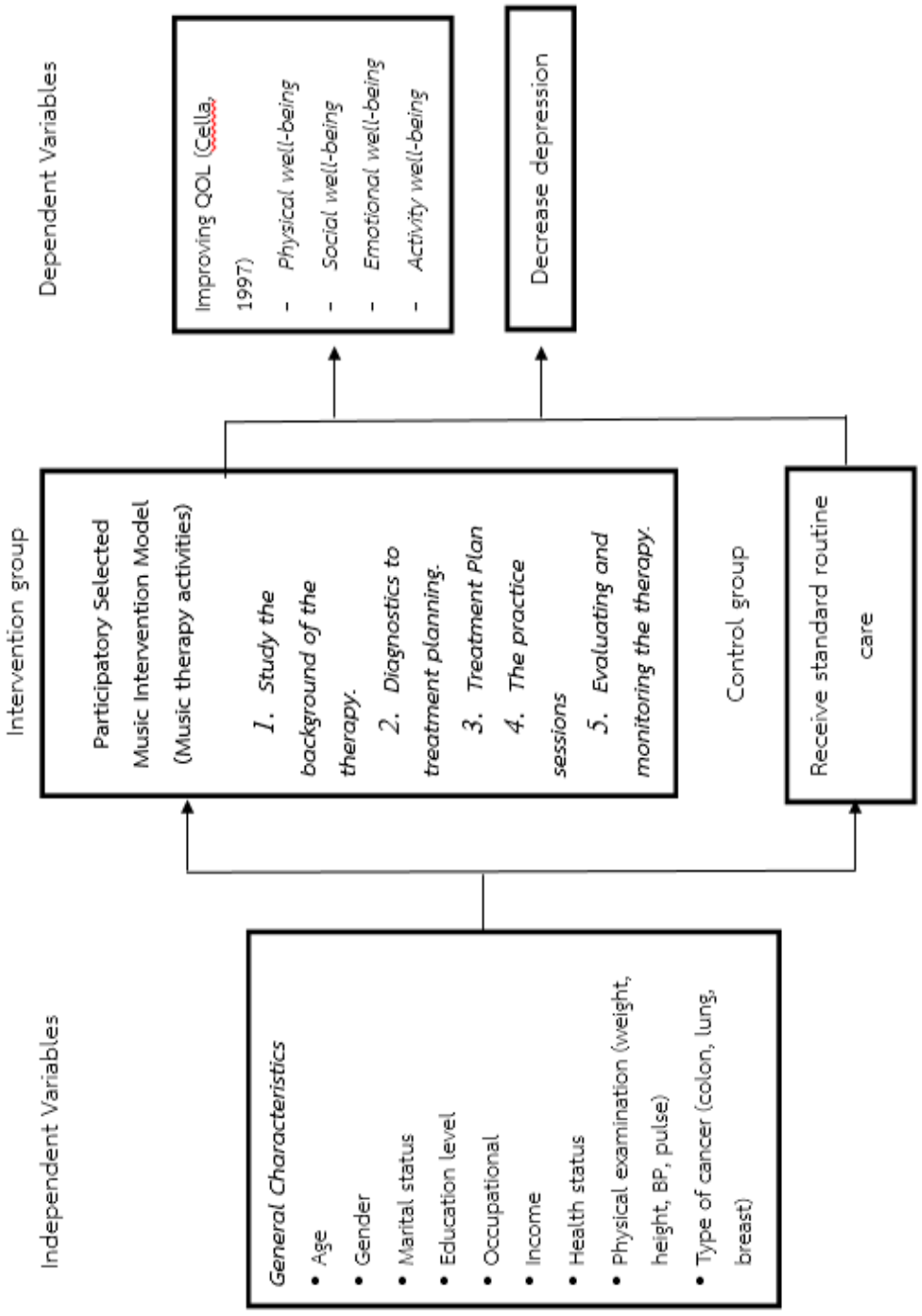


Figure 1.1: Conceptual Framework

CHAPTER II LITERATURE REVIEW

This chapter examines literature related to the effect of participatory selected music intervention model for improving quality of life of older adult cancer patients undergoing chemotherapy.

The area of literature review are presented in sequence as follow:

1. Cancer and older adult
2. Chemotherapy in older adult
3. Quality of life in older adult
4. Depression in older adult
5. Music therapy
6. Related research

2.1 CANCER AND OLDER ADULT

1.1 The cancer incidence is most commonly found on elderly people (Yanclik, and Ries, 2000; Vecchia et al., (2001) and this is found until the age of 85 years old, and then begin to decline after age of 95 years (Stanta et al., (1997). In the United States, 50 percent of cancer patients was in those elderly aged older than 65

years (Yanclik, and Ries, 2000; Vecchia et al.,(2001).The incidence of cancer in the elderly can be explained by three main phases.

1) Initiation phase: It is initial from the exposure to carcinogens in the body which cause the gene mutation. This mutation does not cause the harmfulness into death. However, it will affect the replication. These mutation processes alone cannot cause cancer. The changes into cancer cells are when they are stimulated by carcinogens for entering to the 2nd Phase.

2) Promotion phase: The carcinogens from the environment which come from various sources such as air, water, soil, natural phenomena or chemicals that humans produce. These carcinogens induce the loss of control in the gene function. The function of cell in the starting stage cannot operate the cancer, if the concentration of the carcinogen exposure is at the low levels. Consequently, this phage is dependent on the amount of carcinogens that cause changes of cell function. The frequency of the stimulation is the most significant variable to cause cancer. If the cells get stimulated frequently, the mutations will be into cancer cell, eventually. The obvious example is smoking. The cigarettes are the promoter or actuators.

3) Progression phase: This is the phase that cancer cells grow and increase indefinitely by the lack of gene function within the cell. Therefore, we cannot identify group of cells that is still dividing themselves, and these cannot be controlled. Thus, the spread of cancer cells is going on to other parts of the body.

Moreover, the role of the immune system has evolved to the cause of cancer such as the cancer in the lymphatic glands or other types of cancer that are caused by the immune system stimulation. Stanley, Blair and Beare (2005) has described the process of aging will be induced to the genetic material damage. The ability of cell repairing for restoring to the normal when stimulated is not inhibited. Therefore, the elderly people have the high risk of the cancer. There are some theories regarding aboriginal elders that are not a direct cause of the cancer, but there are some mechanisms that are involved including the length of cancer that takes a long time, and with age the tissues are susceptible to carcinogens from the environment.

The evidences from laboratory and the information in the incidence of cancer were found the changes at a molecular level with the aging process which is a key factor affecting the growth of cancer cell and this spread will affect the immune system function. The increasing of age will decrease the immune functioning. It was found that the elderly who's aged over 85 years old, the immune system will loss of self-replication ability. This is easier to get cancers (Bonafe et al., 2001). The obvious examples are found in skin cancer. In females the cancer are found over aged of 45 and in males it starts at the age of 60 years (Glass and Hoover, 1989). In the case of prostate cancer, the onset of cancer is found in the middle age, and will increase in age of 80 years and older (Glass and Hoover, 1989; Balducci et al., 1997).

1.2 The incidence of cancer.

The incidence of cancer is caused by the different races, religions, traditions, economy, society, and the geography of the country. Among the developing countries and developed countries, the incidence is also different. For example, white male in the United States have the higher risk of genitourinary tracts cancer, central nervous system cancer, testicular cancer, lymphatic glands cancer, and leukemia than people of other races (Hansen, 1998). The white female in the US tend to have the breast cancer higher than women of other nationalities. Similarly, African males of origin living in the US were found the prostate cancer, lymphatic cancer, lung cancer, oral cancer, and prostate cancer higher than any other nationality (American Cancer Society, 2004). For the people in the Asia Pacific group, a liver cancer and stomach cancer was found in an equal ratio of male and female. In China, Philipines, and Hawaii, and Japan prostate cancer was mainly found in males. In Korea, Lung cancer, stomach cancer and intestine cancer are mostly found. In Vietnam, males tend to have lung cancer and prostate cancer in the highest rank and in female cervical cancer was mostly found (American Cancer Society, 2004).

For Thailand in 1999, it was found that the top three cancers that were mostly found in male were liver and biliary tract cancer, lung cancer and large intestine or rectum cancer, respectively. The top three cancers that were mostly found in female cancer were cervical cancer, and breast cancer. However, the current trend of cancer has been changed since Thailand has developed into a more

industrialized city. According to statistics from 2002 to 2008, women were mostly found the breast cancer followed by cervical cancer and liver cancer. In male, the top ranks were still the liver followed by lung cancer and colon and rectal cancer (Cancer in Thailand, 1998 - 2002).

In the elderly, the National Cancer Institute has not identified the elderly directly but has been identified by age, gender, and type of cancer. The published (online) in 2005 found that older men whose aged between 60-69 years were mostly found in liver cancer followed by lung cancer, and large intestine and rectum cancer. In women, breast cancer was mostly found (8.50 %), but it was found in the aged group of 40-59 years old followed by cervical cancer, intestinal and lung cancer, respectively (National Cancer Institute, 2550). This followed the trends on a national and overall. Cancer has been mostly found in the elderly in the top rank.

1.3 The most common cancers of the elderly in Thailand.

1.3.1 Lung cancer

Lung cancer is common found in both male and female. The incidence has increased in both genders over 10 years ago. Female was found to be died from this cancer higher than breast cancer. Since 1999, the incidence of the disease has decreased for both genders (American Lung Association, 2004). In Thailand, lung cancer was found in the second rank of cancer, but in the north of Thailand, this cancer was found in the first rank because of a local cigarette that has the high amount of tar and carcinogens. In addition to the Northern, in Bangkok lung

cancer was found in the high ranking because of its pollution as the city and industrial. Lung cancer was found in the elderly 19.4 percent in the range of 60-69 years old (adults were found 14.2 percent with the range of aged 50-54 years) (National Cancer Institute, online, 2005). The risk factors were found from people who smoke for a long time, and those who do not smoke, but receive the smoke from others (second - hand smoke). It was found that 90 percent of those deaths caused by smoking and was often asymptomatic in the age range of 70-80 years (Wynder and Stellman, 1979). Other factors that promote or stimulate were such as working in the factories with toxic substances: arsenic, ether, nickel, radon, asbestos and petroleum products oils and air pollution. Of these chemical or substances the risk will get harmful when expose to those in several time repeatedly)American Lung Association (2004).

Signs and symptoms

In the elderly people, they sometimes have the other chronic diseases. This may be difficult to observe. However, there are specific symptoms such as cough with blood, chest pain, pneumonia, and bronchitis infection. Systemic symptoms include loss of appetite (anorexia), weight loss, and fatigue. The specific symptoms are depending on where the cancer spread to distant organs such as if the cancer spread to the larynx, it can cause hoarseness and if the cancer spread to the brachial plexus, it can cause shoulder pain and dyspnea. In the elderly, the

symptoms may be less painful because they ever get to experience in difficulty breathing or weight loss (Shell, Bulson and Vanderlugt, 1997).

Early Detection

1) Lung cancer can spread within one year before symptoms appear. Therefore, patients will be detected while in the metastatic stage or being spread as a result 90 percent of patients will be died of lung cancer within 1-2 years.

2) Chest x-ray and detecting cancer cells in the sputum: American Cancer Society was suggesting that these detections do not recommend for routine screening of lung cancer in asymptomatic persons.

Treatment: surgery, radiation and chemotherapy. These are depending on the type of cancer and stage of disease. Lung cancer treatment is divided into two groups.

1) Small cell cancer occur approximately 20-25 from smoking causes. All these cell types are poor prognosis because the cells grow and speared very fast, they will respond to chemotherapy and radiation (American Lung Association, 2004).

2) Non-Small cell cancer is the call in the group of squamous cell, adenocarcinomas, and large cell. These cells are slow-growing and about 80 percent of lung cancer mainly caused by smoking in males (90 percent) more than in females (75-80%). When patients get a new diagnostic in cell types, most diseases are spread to other organs. Even when the surgery is operated in the 1st or 2nd stage, it is also a chance that the disease will recurrent to 50 percent. In elderly age over 75 years will

not be treated like a younger age and may not be received aggressive treatment because they may be having the comorbidity.

1.3.2 Colorectal cancer

Colorectal cancer is mainly found in the older as a result of the changes that take 40-50 years. This cancer is found in the second rank of all cancer deaths causing in the United States. Incidence of the disease has recently begun to decline, especially in whites. However, the incidence of the disease is found the same rate in the African – American. The death rate of colorectal cancer has dropped to 32 percent in female and 14 percent in male, which shows that the incidence of the disease decrease, and the survival rate get higher (American Cancer Society, 2004). In Thailand, colorectal cancer is found at third rank and is likely to increase sharply in both genders, which is estimated to have caused more than 1,000 new cases in the year of 2008 with the highest rate of increase found in the Central of Thailand, especially in Bangkok (Teeravut, 2004).

Risk factors: The high risk of colorectal cancer is found in people who have a family history of colorectal cancer, people with polyps or intestinal inflammatory disease, people who eat less fiber and like a low fiber with high calorie, and people who eat high-fat diet. The report showed that foods that are high in fiber and low-fat diet can prevent the colorectal cancer (American Cancer Society, 2004). Alcohol consumption and smoking are both at high risk, and people who do not

smoke but drinking alcohol by consuming a diet rich in vegetables and fruits are also low risk.

Signs and symptoms: In the early stages, the symptoms are minor changes. There may be only blood in the feces. If the cancer is occurring in right large intestine will cause the pain same as appendicitis. If the cancer is found in transverse colon, blood in the feces may be found and may cause clogging. If it is found in the left side of large intestine, the bright red blood will be mixed in the faces. This can help in the detecting in early detection. American Cancer Society recommends the early stool checking in the age of 50years in both male and female every year to see blood mixed with the stool. The sigmoidoscopy or barium enema is recommended to be done in every 10years. In the elderly who are at higher risk need to be adjusted for checking according to the condition (American Cancer Society, .(2004

Treatment: Surgical treatment is considered for the primary phase that has not spreaded. The chemotherapy drug is usually given after surgery. This will be effective when the cancer spread to the lymph glands or disease has spread to the other organ. Sometimes it can be a combination of radiation therapy and chemotherapy for the best treatment (American Cancer Society, 2004).

Survival: If the cancer can be detected early, the survival will be found at five years as high as 91 percent, but if the cancer has spread to other organs

or to the lymph nodes, the rate of survival will be reduced to 63 percent (National Cancer Institute, 2003).

1.3.3 Breast cancer

In the US, the incidence of breast cancer has increased by 4 percent and death rates dropped during the year 1992- 2004, especially in the younger age group (Steele and Steele cited in Meiner and lueckenott 2006) because of the screening technique that is simple and the advancement in the treatment (American cancer Society, 2004). 80 percent of breast cancer occur in women older than 50 years and died in age range of 55-74 years old. The concerned sign is that breast cancer in the final stage was usually found in old age. The first signs that showed are the breast lump. It estimates that 10 percent will have symptoms when the cancer has spread to the lungs, liver, bones and adrenal glands, and the sign will be found in those organs (American Geriatric Society, 2000).

Data from the United States revealed that breast cancer found mostly in Caucasian and often found in the same race or same culture. From the incidence of disease surveillance that was calculated from the program of the National Cancer Institute (National Cancer Institute, 2003) found that the Hawaiian and African-American living in the US had mostly found the incidence of breast cancer in the Metastatic stage. It also found that the African-American had the highest death rate due to the stage of the disease has been diagnosed in a late stage and age was

ranged between 55-69 years. However, the group of 70 years, the death rate is higher. This also was found in Caucasians as well (American Cancer Society, 2004).

Risk factor

1) The influence of estrogen hormone that was received for a long time, or the use of birth control pills for a long time. From the empirical evidence, women who are menstruating before age 12 years, who have late monthly menstruation, and who have menstruation until the age of 55 years or older are at greater risk.

2) Those that have never had children or having the first child aged over 35 years are at a higher risk (Reigle, 2000).

3) The incidence of breast cancer is mostly found in the age range of 50-59 years old, and a high early age is found in 45-49 years old of age at menopause. It is associated with the production of estrogen hormone in the ovaries. The point of interest is in the age range of 65-69 years old at menopause age associated with an imbalance of estrogen produced by the adrenal. Therefore, both group of cancer is different (Bergkvist et al, 1989; Pfeifer, 1997).

4) Breast cancer is believed to be caused by hereditary only 5-10 percent. The relay is BRCA1 BRCA2, a gene that protects DNA for inhibit the cancer, but if the BRCA1 gene mutated it will cause breast cancer. If more than 40 percent and if BRCA2 is mutated, it can cause breast cancer by more than 30 percent (Cummings and Olopade, 1998).

5) The high-fat diet and obesity are the risk factors for significant experiments. In animals showed that the proliferation of breast cancer cells can change the level of estrogen, Pituitary and Thyroid function which is sensitive to food (London and Willett, 1989). Obesity and menopause are also related to metabolism of estrogen.

6) The exposure from chemicals such as pesticides or other chemicals including those who drink alcohol regularly and those who do not exercise (Knobf, 1996).

Signs and symptoms

1) If it is a common neoplasm, the lumps are soft and it can be mobile masses with regular borders.

2) If it is a malignant, lump is hard and fix with irregular borders. If the nipple skin is being pull, the skin will be dented because cancer cells intrude into ligament of the chest skin that will be red and warm due to inflammation which resembles into orange peel that may not be painful.

Screening

1) Breast self-examination needed to be checked one time per month starting from the age of 20 years old which found that 90 percent of breast cancers are detected by self or spouse. This should be checked month after 7 days of menstruation. Nurses or health professional should support or help teach the

elderly, and concern the importance of breast self-examination. The elderly people are found that they also lack of the knowledge to detect breast self-examination.

2) Mammography can help find very small cancers which are still not found by self-examination. It provides high accuracy. The American Cancer Society recommends that mammogram should be done every two years at age of 40-49 years old and every one year at the age of 50 years (American Cancer Society, 2004).

Survival: The survival rate depends on the stage of the cancer, health fundamentals of the immune system, and stress level to prevent the disease from spreading. This will make the lives of up to five years and almost 100% can be survival after 20years by 53 percent) National Cancer Institute, .(2004

1.4 Cancer treatment with chemotherapy

As a remedy to be applied in cases when the cancer is metastatic treatment with chemotherapy, it has many precautions and side effects. The care for patients during this treatment needs to be closely monitored. Chemotherapy not only is used to treat metastatic cancer but also is used as adjunctive therapy in combination with surgery, and may be used as neoadjuvant chemotherapy or used before radiation as well. The chemotherapy is currently popular used in the combination chemotherapy in order to increase treatment efficacy and reduce toxicity of each drug. This intervene the treatment to be more effective including the reduction of drug resistance in cancer (Sumitha, 2536).

This research will discuss a treatment with chemotherapy in lung cancer colon rectum cancer, and breast cancer patients.

1.4.1 Treatment of lung cancer with chemotherapy treatment (Varachai, 2541).

1) Stage I: Lobectomy or Pneumonectomy treatment is the use of adjuvant chemotherapy with Cisplatin - based regimen that does not improve the survival rate of patients with pulmonary function that may not be well function, but the treatment can be received by limited wedge resection surgery.

2) Stage II: Patients with an Adenocarcinoma type is a prognosis worse than Squamous cell carcinoma. If this surgery cannot be done, the treatment may be treated by irradiation.

3) Stage III A: This stage term is often found Micro metastases. Therefore, surgery alone results in low survival rates. A patient who had surgery and been being found a Mediastinal lymph node metastases are in median survival for 1 year and offers patients a percentage of 10-20 with survival rates of up to three years regimen chemotherapy in terms of Neoadjuvant chemotherapy. The CEP (cyclophosphamide, etoposide, cisplatin) and MIC (mitomycin-C, ifosfamide, mesna, cisplatin) in patients of the local advanced disease will be used as the combined radiation with chemotherapy with good results. A patient who treated with both treatments has a 1 - year survival of 60 percent compared to 46 percent among patients with radiation alone.

4) Stage IV: Recently, there is no standard regimen, but this will be considered to be Paclitaxel with Carboplatin, which currently receives more recognition. Patients must have a good performance status to use the CaT (carboplatin, paclitaxel), PE (cisplatin, etoposide), MVP (mitomycin-C, vinblastin, cisplatin), ICE (ifosfamide, mesna, cisplatin, and etoposide), CAP (cyclophosphamide, doxorubicin, cisplatin), or Navelbine with Cisplatin and Paclitaxel in combination with Cisplatin Gemcitabin or so.

1.4.2 Colorectum cancer treatment with chemotherapy

Treatment depends on the spread of the disease to the lymph nodes from the spread of cancer to nearby organs.

1) Adjuvant therapy: 5-FU-Levamisole and Leucoverin / 5-FU.

2) Management of stage IV disease: 5-FU-Leucoverin (low dose), Irinotecan, Oxaliplatin combined with Leucoverin and 5-FU.

In additionally, there is also an oral chemotherapy drug such as Capecitabine that show the fewer side effects and is also the elderly (Lichtman, 2004).

1.4.3 Treatment of breast cancer with chemotherapy

This can be divided into three types (Sumitra, 2536; Prasert, 2544):

1) Adjuvant chemotherapy: From the study income from work, the study found that breast cancer patients who had surgery alone are likely to survive for 10 years shown only 50 percent. The remainders have returned repeatedly and

died. The chemotherapy patients after surgery can reduce the critical situation of recurrence, so the patients will have a higher chance of survival.

2) Chemotherapy for advanced and metastatic disease: This is most often used to treat the symptoms for the patients admitted to considering risk factors for recurrence. If the risk is low such as the patient whose aged less than 65 years old and in menopausal, the therapy of hormone receptor positive will be effective. However, in the case of high risk (aged 50 years old or younger), hormone receptor will be negative, so the chemotherapy are being considerated, and the chemotherapy used in the treatment including CMF (cyclophosphamide, methotrexate, 5-FU), CAF (cyclophosphamide, adriamycin, 5-FU), MMM (mitomycin - C, mitoxantrone, methotrexate), MV (mitomycin-C, vinblastine), or single Paclitaxel, navelbine, Gemitabine (Varachai, 2541) and so on.

3) In case of Local advanced disease or in a meaning of huge tumor size, this cannot be treated by surgery and radiology. Chemotherapy treatments are used to reduce the size of the tumor and control the Micro metastasis. Typically, 3 cycle chemotherapy is being used, and then surgery and radiation will be considered in the next step. In some cases, it is considered a drug after it has been treated at the specific area. The drug treatment will be administered to a 3 cycle. It will be concluded that the best results of treating patients with breast cancer is to maintain a combination of surgery, irradiation, radiation, hormone therapy and chemotherapy.

2.2 CHEMOTHERAPY IN OLDER ADULT

Aging can affect the efficacy in treatment, safety and toxicity of the drug, which is divided into three levels: pharmacokinetics, pharmacodynamics, and tolerance of normal tissues.

Pharmacodynamic in aging is to study the effects of drugs in target sites or in response to drugs to tissues that shows the results of treatment. In the same word, chemotherapy causes the changes in cancer cells such as lacking of oxygen and stopping the dividing of cancer cells (Balducci and Extermann, 2001).

Tolerance of normal tissues: Chemotherapy doses affect the normal tissue. Therefore, the increasing of age has the greater in sensitive tissue. This means susceptibility to chemotherapy increases with age such as mucosa of the hematopoietic system, heart cells, and central nervous system and peripheral cells (Balducci and Extermann, (2001).

From a review of the literature in the operation of the Cancer Center of North American, it was found that patients with cancer in large intestine with totaling more than 1,400 people were over 65 years old and had the experience of mucositis from taking Fluorinated pyrimidines (5-FU) (Jacobson et al., 2001), and found that the almost all of death rate was associated with mucositis which was common when treated aggressively (Stein et al., 1995).

Age is a risk factor for severe neutropenia. Dees et al. (2001) had described the occurrence of leukemia after receiving the Doxorubicin and

Cyclophosphamide that was more severe with age, and the incidence was toxicity to the bone marrow and increasing the age of over 65 years, which was not found the same in those who are younger.

2.3 QUALITY OF LIFE IN OLDER ADULT

Quality of life was mentioned since the end of World War II to identify the satisfaction of individual life and it related with materials and goods such as house, car, and money to travel and retire (Farquhar M, 1995). Moreover, QOL was used to evaluate the satisfaction and personal concern for their life that related with education level, economic growth, health and welfare, and the defense of the non-communist world (the National Goal of President Eisenhower's Commission (1960) reference in Morag F, 1995) (Farquhar M, 1995).

The definition of quality of life is as numerous and inconsistent as the methods of assessing it. It is a problematic concept as difference people value difference things (Farquhar M, 1995). In 1980, quality of life were categorizing into four dimensions by George and Bearon (Farquhar M, 1995). It was included in general health domain and functional status domain, socioeconomic status domain, life satisfaction domain, and self-esteem domain (reference in Morag F, 1995). However, Morag F said that "definition of quality of life was as numerous and inconsistent as the methods of assessing it". It is a problematic concept as difference people value difference things (Farquhar M, 1995).

Lawton (1991) proposed a Four Sector model in which psychological

wellbeing, perceived quality of life, behavioral competence and objective environment were present in the QOL of older individuals (Lawton in Farquhar, M, 1995), when they established what is not quality of life: QOL is not equivalent of quality of the environment, is not equal to the quantity of material goods, is not equivalent to the physical health status, or to the quality of health care, just as it is distinct from subjective constructs such as life satisfaction, morale or happiness (Birren and Dieckmann in Farquhar, M, 1995).

In 1997, Fernandez-Ballesteros said that "Quality of life is referred to the successful aging through usual aging to aging with disability (and dependency). Quality of life is a key concept in environmental, social, medical and psychological sciences, as well as in public policy and in the minds of the population at large; nevertheless, there is no consensus regarding the definition of QOL" (Fernández-Ballesteros R, 2011)

In 2002, WHO was defined quality of life as "an individual's perception in their life as the concept of culture and value system and related with goal, expectation, standard, and concerning, and the quality of life in age group depend on autonomy as the perception of ability to control, coping, and decision in daily living, and independent as ability of activity daily live function are perform" (World Health Organization, 1999). QOL assessment provides perception of elderly and/ or their caregiver on physical health, psychological health, social relationships, and environment.

Quality of life: means to recognize the extent to which expectations have not been affected by the disease or condition being treated while elderly cancer patients are receiving chemotherapy by covering the body well-being, emotional/ mental Happiness and practical activities. This changes to the health status of the concept of Cella (1997), which are described as following.

Physical well-being refers to the elderly cancer patients undergoing chemotherapy, as perceived by the patient's own body.

Social/family well-being refers to elderly cancer patients receiving chemotherapy perceive care or support from family members who intimate with the patient.

Psychological well-being means as elderly cancer patients receiving chemotherapy have the awareness of the illness, such as anxiety in their illness.

Activity well-being in the practice of activities means that cancer patients undergoing chemotherapy perceive efficacy in practice desirable or the ability of the patient to accept the illness.

The quality of life of elderly cancer patients receive chemotherapy as a measure of quality of life for cancer patients General (FACT-G: Thai Forth version which was translated by Ratanatharathorn V, Sirilerttrakul S, Jirajarus M, Silpakit C, Maneechavakajorn J, Sailamai P, et al, 2001). The score of quality of life while elderly cancer patients are receiving chemotherapy interpret by the total score. If the mean total score of elderly cancer patients currently receiving chemotherapy is high, it

means that they have a better quality of life.

Quality of life (QOL) is an increasingly important concept in the evaluation of treatments and interventions within the context of health care. Traditionally, medical and health decisions were based largely on the potential for survival and longevity. As knowledge and treatment options have increased, new ways of making treatment choices have developed. QOL has now become as salient an issue in the decision-making process as the length of an individual's life (Ferrans, 1990). Such interest in QOL has seen an expansion in the definition of QOL. Indeed, the concept of QOL has become broadly defined as the importance of an individual's overall experience of life satisfaction and their sense of well-being (Andresen & Meyers, 2000; Cella & Nowinski, 2002; Ferrans, 1996; Haas, 1999; Meeberg, 1993; Ventegodt, Andersen, & Merrick, 2003). The World Health Organization Quality of Life (WHOQOL) group highlights and defines the subjective and multidimensional nature of QOL as, "...an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards, and concerns" (WHOQOL, 1995, p. 1405).

This definition has served as the foundation for the development of multiple definitions of QOL. While definitions of QOL are various, two key aspects of QOL are often employed in defining the construct: subjectivity and multidimensionality (Aaronson, 1993; Cella & Nowinski, 2002; Felce, 1997; Moons,

Budts, & De Geest, 2006; Schipper, Clinch, & Powell, 1996). Subjectivity refers to understanding QOL from the individual's own perspective rather than being based on objective medical, physiological, or functional measures (Aaronson, 1993; Cella & Nowinski, 2002; Felce, 1997; Moons et al., 2006; Schipper et al., 1996). Such subjectivity may include their perception of illness, or treatment, their expectations of self, and their appraisal of risk/harm (Aaronson, 1993; Cella & Nowinski, 2002; Felce, 1997; Ferrans, Zerwic, Wilbur, & Larson, 2005; Moons et al., 2006; Schipper et al., 1996).

Indeed the answers given to questions such as, "What is your quality of life?" or "What does quality of life mean to you?" are highly subjective and personal, and may change, depending on the time frame, mood, location, and values held by individuals (McDowell & Newell, 1996). Multidimensionality, in contrast, assesses the multiple domains of an individual's functioning (Aaronson et al., 1993; Cella & Nowinski, 2002; Felce, 1997; Ferrans et al., 2005). Generally, the multidimensional nature of the concept is that it is a widespread pattern that includes some form of physical, social, emotional, and functional component (Aaronson et al., 1993; Ferrans et al., 2005; Ferrell, Grant, Funk, Otis-Green, & Garcia, 1997; Northouse et al., 1999). Also some researchers have included a spiritual dimension (Ferrell, Grant, Funk, Otis-Green, & Garcia, 1998; Wyatt & Friedman, 1996), while others have kept the dimension of spirituality distinctly separate, defining it as a correlate of QOL (King et al., 2000; Shapiro et al., 2001). Although QOL is widely accepted as a relevant

outcome of health care, there is no general agreement on either its definition or its measurement (Carr & Higginson, 2001; Ferrans et al., 2005).

The concept of QOL is broadly defined as an overall experience of life satisfaction (Felce, 1997; Haas, 1999), while health-related quality of life (HRQOL), is often used synonymously with subjective health status, that is, with a more precise impact of the disease, the impairment and/or the treatment (Carr & Higginson, 2001). Importantly, many researchers studying medical populations have narrowed the concept further by defining and assessing a number of predefined core domains. For example, the European Organization for Research and Treatment of Cancer (EORTC) has operationalized HRQOL in cancer diseases in terms of functional status, cancer and treatment-specific symptoms, psychological distress, social interaction, financial impact and overall QOL (Aaronson et al., 1993). However, according to Carr and Higginson (2001), health related quality of life is the gap between an individual's expectations of health and their experience of it. Thus the perception of quality of life varies between individuals and is also dynamic within them. Consequently individuals with different expectations will report that they have a different quality of life, even when they have the same clinical condition. For example, those whose health has changed may still report the same level of quality of life when measures are repeated (Carr & Higginson, 2001).

Quality of life in specific conditions in the older cancer patients

Quality of life in lung cancer

Lung cancer is significantly associated with low QOL (Esbensen BA et al.2004) Lung cancer holds a unique position among solid tumors, because at the time of diagnosis the disease is more advanced and the median survival is relatively short (Grunberg SM, et al, 2000) Lung cancer diagnosis and treatment often produce stress resulting from the actual symptoms of the disease. The results emphasized that elderly persons newly diagnosed with lung cancer are especially vulnerable and need special attention in clinical conditions to compensate for their grave situation in relation to QoL. Vinorelbine, a semisynthetic vinca alkaloid, represents a well-tolerated treatment for elderly patients with advanced non-small-cell lung cancer (NSCLC). Some authors explored the QoL of 161 elderly patients in a multicenter randomized trial comparing vinorelbine treatment with BSC alone. QoL was evaluated with EORTC questionnaires QLQ-C30 and QLQ-LC13 and the QoL data were analysed by fitting a linear mixed model for each QoL scale. Vinorelbine-treated patients scored better than control patients on QoL functioning scales and they reported fewer lung cancer-related symptoms but worse toxicity-related symptoms. There was a statistically significant ($p = 0.03$) survival advantage for patients receiving vinorelbine; median survival increased from 21 to 28 weeks in the vinorelbine-treated group. Vinorelbine improved survival of elderly patients with advanced NSCLC and overall QoL. In a more recent randomized phase III trial

evaluating the efficacy and safety of docetaxel versus vinorelbine in NSCLC elderly patients, docetaxel improved progression-free survival, response rate and disease-related symptoms versus vinorelbine (Kudoh S et al, 2006)

Nowadays, docetaxel monotherapy is considered as the new option in the standard treatment of advanced NSCLC elderly patients. In another phase III randomized Multicenter Italian Lung Cancer in the Elderly Study (MILES) trial on the OS prognostic value of baseline assessment of functional status, comorbidity and QoL, data of 566 elderly NSCLC patients treated with chemotherapy were analyzed. Functional status was measured as activities of daily living (ADL) and instrumental ADL (IADL). The presence of comorbidity was assessed with a checklist of 33 items; items 29 and 30 of the EORTC QLQC30 questionnaire were used to estimate QoL. ADL was dichotomized as none versus one or more dependency. For IADL and QoL, three categories were defined using first and third quartiles as cut-off points. Comorbidity was summarized using the Charlson scale. Better values of baseline QoL ($p = 0.0003$) and IADL ($p = 0.04$) were significantly associated with better prognosis, whereas ADL ($p = 0.44$) and Charlson score ($p = 0.66$) had no prognostic value. Pretreatment global QoL and IADL scores, but not ADL and comorbidity, have significant prognostic value for survival of elderly patients with advanced NSCLC who were treated with chemotherapy. Using these scores in clinical practice could improve prognostic prediction for treatment planning. Lung cancer, because of its history and short median tumors- related survival, is one of the few neoplasms in

which QoL has been largely studied in elderly patients, demonstrating a good prognostic significance when improved.

Quality of life in breast cancer

There is a paucity of information in the literature that focuses on QoL issues after mastectomy with breast reconstruction in elderly women. The purpose of Girotto's study was to review the authors' experience with breast reconstruction after mastectomy in women older than 65 years of age. Emphasis was placed on the types of reconstructions, outcomes and evaluation of issues related to QoL. Outcomes were assessed with the use of a self-reported questionnaire (SF-36) addressing HRQoL, body image and physical functioning. With respect to overall QoL issues after reconstruction, older patients with breast reconstruction had better outcomes than age-matched general population patients and previously reported mastectomy- only patients (older than 55 years) in all surveyed areas (Girotto JA et al, 2003)

Specifically, study patients reported better outcomes in the subscales that were strongly influenced by one's mental health but worse outcomes in the areas related to physical function. In conclusion, older patients maintained better outcomes over the younger patients when influenced by one's mental health. Declines in physical functioning among elderly cancer patients threaten in fact QoL and the ability to maintain independence. Adherence to healthy lifestyle behaviors may prevent functional decline. Project Leading the Way in Exercise and Diet (LEAD),

an intervention development study of the Pepper Older Americans Independence Centre, aimed to determine whether breast and prostate cancer survivors (older than 65 years) assigned to a 6-month home-based diet and exercise intervention experienced improvements in physical functioning when compared with an attention control arm receiving general health information. Home-based diet and exercise interventions held promise in improving lifestyle behaviors among older cancer survivors, changes that trended towards improved physical functioning (Demark-Wahnefried W, Clipp EC, Morey MC, et al. 2006)

Future studies should incorporate larger sample sizes and interventions sustaining long-term effects and also take into account secular trends; these efforts will require adequate planning and resources to overcome the numerous barriers to intervening in this difficult to reach yet vulnerable population. Even if breast cancer is the first neoplasm as incidence within women, QOL has been studied in only a small number of trials on elderly cancer patients. Considering the entity of surgery- (often physically and psychologically detrimental because of mastectomy), radiotherapy- (often related to local damage and small compliance because of the prolonged daily administration) and chemotherapy-related problems (often associated to alopecia and vomiting) a QOL evaluation could be very useful in understanding these patients and their possible problems better.

Quality of life in colorectal cancer

Temporary or final colostomy as colorectal sequel causes

psychological problems felt especially by elderly oncology patients. Deep and fixed habits are usually modified, as far as evacuating and sexual behaviors are concerned. After demolitive surgery, most patients fear having to be dependent on others for situations which they feel are embarrassing (due to fecal smell, etc.) (Marsicano S, Pirovano M, Nasisi A, et al. 2006)

Therefore, elderly patients and their QOL worsen, as a consequence. In these people, psychotherapy and psychological rehabilitation due to therapy stress are often difficult because old age itself reduces hope for the future. To prevent social withdrawal or anxiety, a psychological rehabilitation for patients and their families should be suggested from the diagnostic phase. Also in this case, even if rectal cancer is a much diffused neoplasm, QOL has been studied in only a small number of trials on patients older than 70 years. Considering the entity of surgery (often detriment with abdominal-perineal amputation, definitive colostomy and sexual impotency), radiotherapy- (also in this case, often related to local damage and small compliance because of the prolonged daily administration) and chemotherapy-related problems (with infusion pump device) a QOL evaluation could be useful in helping these patients improve both physically and psychologically.

2.4 DEPRESSION IN OLDER ADULT

Prevalence and Characteristics of Depression in Older Adults

Depression, anxiety and fear also influence to quality of life in many regions. Mental health problems are commonly found in elderly. It was related with chronic diseases, poor physical activity, functional impairment and depreciation, autonomy, less of social activity, intimacy and others. In addition, depression in Thai elderly was high. In 2009, it was 4.6% of elderly people, especially female (United Nation Population Founds, 2008). In addition, compared depression between elderly (≥ 60 years) with other aged group (15 – 59 years) found that elderly had more depression than other age group (United Nation Population Founds, 2008). Mental health and physical health are dynamically affecting each other, if elderly have physical problem they will have stress, depression, unhappy and if they have mental problem they might be upset, less active, and poor health care that it will affect to health outcome.

Prevalence estimates of major depression in large-scale community studies are generally low, ranging from 1% to 4.6%. For elders living in home health care settings, estimates for major depression range from 6.4% to 13.5% and 27.5% for subthreshold depression (Bruce et al., 2002; Gellis, 2010; Shao, Peng, Bruce, & Bao, 2011). In fact, depression is twice as prevalent in home health care as in primary care; it is persistent, intermittent, and is associated with medical illness, pain, and disability (Brown, Kaiser, & Gellis, 2007; Lyness, King, Cos, Yoediono, & Coaine, 1999).

Late-life depression is one of the most common psychiatric disorders to present in primary care and home health care settings (Bruce et al., 2002; Gellis & Kenaley, 2008; Gellis et al., 2007; Lyness et al., 1999; Reynolds & Kupfer, 1999). In fact, depression is the third most common reason for consultation with a primary care provider (Singleton, Bumpstead, O'Brien, Lee, & Melzer, 2001).

Elders with major depression in primary care are more likely to die than their counterparts without depression, as elders present their depression as somatic symptoms, causing delay in treatment (Gallo et al., 2013). However, patients with major depression in primary care using intervention practices were 24% less likely to have died compared with their non-depressed peers (Gallo et al., 2013). Estimates for rates of major depression in medically-ill older adults range from 10% to 12% (Fiske, Wetherell, & Gatz, 2009). Thirty-nine percent of elders residing in assisted living facilities have depression (Jang, Bergman, Schonfeld, & Molinari, 2006; McDermott, Gillespie, Nelson, Newman, & Shaw, 2012). In long-term care settings, prevalence rates for major depression may range from 5% to 54% (Blazer, 2002; McDougall, Matthews, Kvaal, Dewey, & Brayne, 2007; Morrell et al., 2011; Seitz, Purandare, & Conn, 2010; Singleton et al., 2001) and clinically significant depressive symptoms range from 14% to 82% (Hyer, Carpenter, Bishmann, & Wu, 2005; McDougall, Matthews, Kvaal, Dewey, & Brayne, 2007; Seitz et al., 2010). Depression is underdetected in long-term care facilities and, if detected, is inadequately treated (Teresi, Abrams, Holmes, Ramirez, & Eimicke, 2001; Brown, Lapane, & Luisi, 2002). In

fact, 28% of older adult residents with depression have received ineffective or no treatment at all (Morrell et al., 2011).

Risk and factors for depression in Older Adults

Chronic medical conditions may contribute to the development and continuation of depressive symptoms and disorders. Insomnia, especially characterized by difficulty in initiating sleep and maintaining sleep, daytime sleepiness, and prior history of depression increase the risk for depression (Jaussent et al., 2011). Other medical conditions such as diabetes, cardiovascular disease, and arthritis increase the risk of late-life depression. Depressed elders are at a four-fold risk for diabetes and cardiovascular disease, especially those who experienced myocardial infarction, heart failure, or coronary artery bypass surgery; depressed elders with arthritis have a nine-fold risk of falls (Teng et al., 2013). Elders living in long-term homes who suffer from nervous system disorders are at an 11-fold risk of experiencing depression (Wang et al., 2012). In fact, elders with low functioning due to other medical conditions are at increased risk for depression (Montesó et al, 2012; Yang, Berman, Schonfeld, & Molinari, 2006).

Additionally, the loss of ability to perform activities of daily living due to medical ailments also increases the risks for elders to experience late-life depression (Yang et al., 2006; Montesó et al., 2012), with men being more at risk compared with women (Montesó et al., 2012). The older adult's perception of their

health status also influences the risk for depression, with those who report a poor rating experiencing more depressive symptoms than those who have a more positive perception of their health status (Yang et al., 2006).

The aging process presents the occurrence of medical conditions which require pharmacological treatment; sometimes the use of several medications. A polypharmacological regimen in treating a medical and/or psychological disorder(s) increases the risk of depressive symptoms (Kao, Wang, Tzeng, Liang, & Ling, 2012), as well as increasing the risk of falling by six-fold (Teng et al., 2013). The use of sedatives and hypnotics is a strategy to treat insomnia and anxiety, often-occurring ailments in elders. However, while these drugs may resolve the adverse effects of the disorder(s), their side effects or interactions with other drugs may cause depressive symptoms (Magnil et al., 2013). Additionally, medical conditions may require ancillary devices which increase the risk of depression in elders by five-fold (Kao et al., 2012). Other risks for major and subthreshold depression include poor social supports, lack of engagement in leisure activities (Lee et al., 2013; Magnil et al., 2013), high stress levels (Lee et al., 2013), and low education (Teng et al., 2013). Elders with war-related experiences are at higher risk for depression compared with their peers lacking such stressful histories (Strauss, Dapp, Anders, von Renteln-Kruse, & Schmidt, 2011).

Protective factors that guard against the manifestation of depressive symptoms and disorders include having a positive attitude toward aging, practicing a religion, life satisfaction, and a sense of mastery (Hashe, Morrow-Howell, & Proctor, 2010; Jang et al., 2006). Elders residing in long-term care homes who are satisfied with their life are less likely to experience depression compared with those whose perceptions are less positive (Hashe et al., 2010). Elders who have positive beliefs and attitudes exhibit a higher sense of mastery, greater religiosity, and more positive attitudes toward aging, resulting in a decreased risk for depression (Jang et al., 2006). Additionally, instrumental and emotional support from family members as well as assistance from formal organizations improves the psychological well-being among older adults and moderates the association between functional disability and depression (Chao, 2012). In fact, concordance in the perception of financial, physical, caregiving, social, and environmental needs between community-dwelling elders and their formal or familial caregivers improves the elder's quality of life and decreases the risk for major depression (Hourties, van Meijel, Deeg, & Beekman, 2012).

Depression screening in Older Adults

A number of standardized self-report rating scales for assessing the presence and severity of depressive symptoms include the Center for Epidemiological Studies-Depression Scale (CESD), Geriatric Depression Scale (GDS), Zung Self-Rating Depression Scale, Beck Depression Inventory (BDI-II), the Patient

Health Questionnaire-9 (PHQ-9), and clinician-interview instruments, including the Hamilton Rating Scale for Depression (HAM-D), the Montgomery Asberg Depression Rating Scale (MADRS) and the Cornell Scale for Depression in Dementia (CSDD). All of these measures are frequently used in long-term care settings (see citation and download information in Table 1 in this chapter's **resource document**). Older adults are not averse to screening for depression, outside of the time and effort required to complete a short interview or form, if the need for the screening is explained clearly and the screening is conducted in an empathetic manner (Gellis, 2009; Gellis & Kenaley, 2008: Gellis & Taguchi, 2003).

In this study will be using Thai Geriatric Depression Scale (TGDS**).** The questionnaire consisted 30 items that the respondents answered to determine personal feeling in the last week events.

Depression In older adult cancer patients

Depression is listed among the geriatric syndromes—the conditions of which incidence and prevalence increase with age (Rosso AL, Eaton CB, Wallace R, et al,2013; Kane RL, Shamliyan T, Talley K, et al,2012; Mohile SG, Fan L, Reeve E, et al,2011). Anumber of medical and social conditions render older people more susceptible to this syndrome (American Psychiatric Association, 2013). They may include thyroid dysfunction, reduced stamina, alteration of neurotransmitters, polypharmacy, reduced sight and hearing, social isolation, and functional

dependence, among others (American Psychiatric Association, 2013). The diagnosis of depression is based on a constellation of symptoms described in the Diagnostic and Statistical Manual of Mental Disorders (5th edition) (American Psychiatric Association, 2013). Without proper management, depression is associated with increased risk of disability, morbidity, and mortality (Charney DS, Reynolds CF III, Lewis L, et al, 2003).

In the last two decades, it has become clear that depression may be present at a subclinical level, (ie, without all the classical manifestations of depression) (Lyness JM, Chapman BP, McGriff J, et al, 2009). Subclinical depression is detectable through a number of screening tests and is also associated with increased risk of medical complications, disability, death, and evolution into a full-blown clinical depression. Despite many studies indicating the risks of subclinical depression, (Lyness JM, Chapman BP, McGriff J, et al, 2009) it is not clear at this point which type of treatment (if any) is beneficial in this condition. At the very least it seems reasonable to watch these individuals closely and to intervene promptly when the patient's subclinical symptoms interfere with his/her activity and quality of life. Depression is highly prevalent in all patients with cancer (Wedding U, Koch A, Ro¨ hrig B, et al, 2007; Massie MJ, 2004) and is associated with poorer outcome that may be explained at least in part by reduced motivation to adhere to the treatment program.

It is a reasonable assumption that depression may be more common and severe in older patients with cancer. In fact, suicide risk in the older patient with

cancer is often not recognized. According to the SEER data, the diagnosis of depression was more common among older patients with cancer diagnoses and was undertreated, because approximately 20% of these individuals received no form of treatment at all (Findley PA, Shen C, Sambamoorthi, 2012). According to the same data, only a minority of patients 65 years and older with colorectal cancer were diagnosed with depression. This finding contrasts with the general clinical experience and suggests that depression may be greatly underdiagnosed in older patients with cancer (Zhang AY, Cooper GS, 2010). The diagnosis and management of depression in older patients with cancer may improve given the acceptance of a comprehensive geriatric assessment as a standard evaluation instrument for these patients. The comprehensive geriatric assessment includes screening older individuals for depression. Accepted instruments for this purpose include the Geriatric Depression Scale and the Center for Epidemiologic Studies Depression Scale (Rao A, Cohen HJ, 2004).

The definitive management of depression is best deferred to a geriatric psychiatrist when available. The health care provider that first diagnoses depression in these patients may institute a number of important interventions. These include reassurance of the patient's concerns about health, risk of death, disability, and discomfort, as well as identifying social conflicts that may trigger depressive syndromes, identifying and giving support to the patient's caregiver, managing polypharmacy, and investigating underlying disorders (such as

hypothyroidism) that may be associated with depressive symptoms. If medical treatment is initiated, it is best to avoid tricyclic antidepressants that may cause constipation, urinary retention, ortostasis, and dry mouth, and begin any treatment with the lowest possible dose of medication while monitoring the patient carefully for adverse effects.

Effect of music intervention on depression

Three types of therapy for major depressive disorder (MDD) have proven efficacy: pharmacotherapy, psychotherapy, and electroconvulsive therapy (Thase, Greenhouse, Frank, Reynolds, Pilkonis, Hurley, Grochocinski, & Kupfer, 1997). The most frequently used treatment for major depression is antidepressant medication (Depression Guideline Panel, 1983). As many as 30% to 35% of patients do not respond to treatment although the development of new and effective medications for depression (Baldessarini, 1985; Baldessarini, 1989; Silver & Yudofsky, 1988). Furthermore, medications also may induce unwanted side effects that can impair patients' quality of life and reduce compliance (Silver & Yudofsky, 1988). Even among patients who show improvement with short-term antidepressant use, there is a significant risk for relapse within 1 year after treatment termination (Craighead, Craighead & Ilardi, 1998; Keller, 1988). Therefore, nonpharmacological methods that promote a mind-body interaction without side effects should be tested to reduce depression in MDD patients.

Depression is one of the most common reasons for using

complementary and alternative therapies (Ernst, Rand, & Stevinson, 1998). In 1991, 40% of the US adult population used at least one such therapy for 1 year (Astin, 1998). It is estimated that about 20% of those who suffering from depression had used an unconventional therapy within the past year (Eisenberg, Kessler, Foster, Norlock, Calkins,& Delbanco, 1993). Depression is among the 10 most frequent indications for using alternative therapies, and music is one of the remedies for this condition (Astin, 1998). Complementary and alternative therapies are popular in Taiwan. A survey revealed that 90% of Taiwanese families frequently combined a variety of approaches in treating illnesses (Wu & Hu, 1980).

Only three researchers have examined the therapeutic effect of music on depression. Each found that music had beneficial effects (Chung, 1992; Hanser & Thompson, 1994; Lai, 1999), but there were methodological problems of small sample size and lack of consideration of confounding factors. Moreover, none studied the effects of music on major depression in psychiatric inpatients.

Music is known to effect the individual by sympathetic resonance. Based on a psychophysiological theory synthesized from the literature, certain type of music induces relaxation and please responses (Lai & Good, 2002), which reduce activity in the neuroendocrine and sympathetic nervous systems, resulting in decreased anxiety, heart rate, respiratory rate, and blood pressure (Good, Stanton-Hicks, Grass, Anderson, Choi, Schoolmeesters, & Salman, 1999; Standley, 1986; Zimmerman, Pierson & Marker, 1988). Music has been found to increase circulating

endorphin (Mockel, Rocker, Stork, Vollert, Danne, Eichstadt, Muller, & Hochrein, 1994), which is associated with moods (Gerra, Zaimovic, Franchini, Palladino, Guicastro, Reali, Maestri, Caccavari, Delsignore, & Brambilla, 1998). Thus, a music intervention was expected to improve depression. Addressing music selection is important when conducting music intervention. Music preference plays a large role because people generally like what they know and dislike the unfamiliar (Lai & Good, 2002).

2.5 MUSIC THERAPY

Music is a variety of sounds brought together in specific structure, organization and relationship (Barber, 1999). Music therapy defined as behavioral science concerned with the systematic application of music to produce relaxation and desired change in emotions, behavior and physiology (Schulbert, 1981 cited by Guzzetta, 1995). Another definition by Munro and Mount who defined music therapy is the controlled use of music and its influence to aid in physiological during treatment of an illness or disability (Munro & Mount, 1978 cited by Snyder & Chlan, 1999).

Philosophical and Theoretical Effects of Music

Archeological findings show that primitive man used music as a way to "appease the gods." In the sixth century, the Greek philosopher Pythagoras, who is considered the founder of music therapy and geometry, believed that music greatly contributed to health. Pythagoras prescribed music and a specific diet to restore and

maintain the harmony of the body and soul (Nilsson, 2008; White, 2000). In the mid1800s, Florence Nightingale introduced the power of music in hospital wards to aid in the healing process of soldiers injured in the Crimean War. Nightingale also noted the effects of different types of music. She observed that wind instrument pieces with continuous sound or air generally had a beneficial effect on patients. She also observed that instruments that do not produce continuous sounds had the opposite effect. Nightingale believed it was the responsibility of nurses to control their patients' environment in order for healing to take place (Nightingale, 1992, as cited in Nilsson, 2008).

By the late 1800s, recorded music could be used in the hospital setting. During the first half of the 1900s, health care practitioners used music in conjunction with anesthesia and analgesia. The first researcher, Kane (1994), provided intra-operative music to distract patients from the horror of surgery. In 1926, a nurse named Ilsen advocated for the implementation of specific musical prescriptions or treatment regimes. She identified rhythm as the basic therapeutic element in music (Nilsson, 2008).

The concept of bringing the music used in the treatment of a disease has been introduced for long time by applying the scientific, medical and music principles. The establishment of the music association for the first time was in the institution in Vienna, Austria in 1959 by applying to use in the mental and neurotic hospital. The music was widely used in the musical effect and influence on the

mind, physical, emotional, and social. Music can penetrate deeply into the emotions that can express words, but cannot be touched. Music can access mental patients who were isolated or living with the pain and sickness. The music that has the simple melodies can reduce anxiety better than music with fun and vary melodies (Beck, 1991).

Forms of music therapy in Thailand are summarized as follows:

1. The use of music in the form of recreation for relaxing: The event features can be entertainments: listen to music, singing and playing music.

2. The use of music therapy for patients with specific diseases: The use of music is to listen to a musical composition. Most of the therapy was used to reduce pain, stress or anxiety.

3. Rituals by folk beliefs: There are ways to use music to communicate with the supernatural as enemies of the faith in the local area (Binson, 2013).

Therefore, in this study will use the benefits of music therapy in the forms and methods of music therapy for the patients with specific diseases. Therefore, the music is very useful to use in conjunction with chemotherapy to treat patients with cancer while receiving chemotherapy. For cancer patients, the elderly will be relaxing, reducing pain and anxiety, which can significantly enhance the quality of life of cancer patients are elderly.

The definition of music therapy

Music is the voice of the character that has been organized and structured. It can be used on three main aspects: aesthetic, treatment, education and relax. Music therapy is part of the development of brains and intelligence.

Music is a variety of sounds brought together in specific structure, organization and relationship (Barber, 1999). Music therapy defined as behavioral science concerned with the systematic application of music to produce relaxation and desired change in emotions, behavior and physiology (Schulbert, 1981 cited by Guzzetta, 1995). Another definition by Munro and Mount who defined music therapy is the controlled use of music and its influence to aid in physiological during treatment of an illness or disability (Munro & Mount, 1978 cited by Snyder & Chlan, 1999).

Music therapy is the planning to use music to control the activities of people of all ages whether childhood until old age to achieve results in the treatment of diseases caused by a deficiency disorders such as emotional, physical and intellectual.

Music affects the body, mind and soul. Tempo affects to the body that helps change the rhythm of the body, such as heartbeat, and breathing as well as muscle function and mood. Music is good for health in many respects such as increasing the body's immunity, reducing anxious behavior (agitation), promoting

awareness, reducing anxiety, reduce pain, reduce stress, and reducing depression (Sasithorn, 2005).

Music therapy is the leading behavioral sciences that help people get relax to a systematic change in mood, behavior and body functions (Guzzetta CE, 1997). A musician is the therapist (Chlan L, 2002). Music intervention aims to use the music to help relax and reduce anxiety and fear.

The Music Therapy is the science that deals with music or other elements of musical applications to modify, develop and maintain physical, mental, emotional wellbeing and society. Music therapist will be an operator to set goals through various musical activities and structured rules and regulations.

Music itself is defined as a complex web of expressively organized sound that contains three essential elements: rhythm, melody, and harmony (Chlan & Tracy, 1999). Rhythm is the order in the movement of music. It is the most dynamic aspect and is a key factor in selecting particular pieces of music for specific purposes. For example, body rhythms (respiration, heart rhythm, and gait) are an integral part of human life, and music can play an essential role in harmonizing these rhythms. The melody of music is related to the sequence of musical pitches and the intervals between musical tones. Pitch is a subjective aspect of sound based on the number of cycles of vibration per second; a faster vibration produces a higher pitch. The melody of a musical piece contributes to the listener's emotional response. It is

dependent on the way pitches are blended together, with the resulting combination of sounds described as consonant or dissonant by listeners (Chlan & Tracy, 1999).

The Benefits of Music

Several studies have shown that music therapy has benefit for patients. The benefits of music therapy include for anxiety reduction (Chlan, 1995, 1998; Wong, et al., 2001), relaxation (Chlan, 1998), pain reduction (Good & Ahn, 2008; Hooi, 2007), cognitive function improvement, noise buffer (Steelman, 1990), tolerance exercise (Allison & Steven, 2008), and tolerance to procedure (Mok & Wong, 2003).

In order to demonstrate the efficacy of music intervention for hospital patients, Evans (2001) conducted a meta-analysis on this topic. He found that music played via headphones reduced patient anxiety during normal care delivery; however, it had no impact on the anxiety of patients undergoing invasive or unpleasant procedures, such as bronchoscopy, sigmoidoscopy, or surgery with spinal anesthetic. While music also produced a small reduction in the respiratory rate during the delivery of normal care, it had no impact on the vital signs of patients undergoing procedures. These findings highlight the fact that further research is needed into many aspects of music therapy intervention. Although the evidence is limited, music also appears to improve the mood and tolerance of patients.

In conclusion, both authors found music to be effective during many specific hospital situations and events. It is suggested that music therapy become a modality option for all patients during hospitalization. Therefore, researchers should

creatively pursue situations where listening to music produces beneficial outcomes in patients during hospitalization.

The element of music

Music is made up of several components, thus the difference of these components produce different type of music. The essential elements of music are include rhythm, pitch, melody, and harmony. First of all, rhythm is the order in movement of music. Musical rhythm can be used to entrain the body rhythm such as heart rate, to the rhythm of music (White, 2001). Thus, rhythm is a key factor when choosing particular music for specific purpose. Steady, slow, repetitive rhythm provides a relaxing effect while fast rhythm can cause tension to listener. (Watkins, 1997). The second element of music is pitch. Pitch is the number of cycles that the sound vibrates per second. The greater the numbers of vibration per second, the higher the pitch. High-pitched music can create tension, whereas low-pitched music can promote relaxation (Barber, 1999; Hicks, .(1992The third element of music is melody. The melody of music is due to the sequence of musical pitch and interval between musical tones. Melody is generally the first thing that the people can listen from music. Melodic pattern can evoke love, joy, and deep peace to listener. The last element is harmony, which is refers to the way in which musical tones are blend together. The harmony can be characterized as consonant or dissonant (Politoski, .(1992Consonance is an orderly blending of musical tone that provides a richness of

relations. In contrast, dissonance is the combination of musical tone that lack of order and relation

For music therapy, the appropriate use of music can evoked physical, behavioral, or emotional change. For example, the stimulating music can enhance mood and decrease apathy, whereas soothing music can reduce anxiety and promote relaxation. However, the therapeutic benefit of music depend on the type of music being played (Hicks, 1992). The characteristic of relaxing music are include steady, slow, flowing rhythm, low pitch, consonance of harmony, no percussive instrument, and no lyric (Chlan & Tracy, 1 9 9 9 ; Hicks, 1 9 9 2 ; Watkins,1997). The classical, instrumental, and natural music are example of relaxing music. Nevertheless, the response to music is individual difference. The factors that may have an influence on response to music are music preference, previous music experience, health state, and mood.

Psychophysiological response to music therapy

Music therapy exerted its effect by synchronizing of inherent body rhythm with the rhythm of music. The effect of music can induce both physiological and psychological effect to listener. Because music is nonverbal in nature, it appeals to the right hemisphere of the brain, which is involved in intuitive, creative, and imaginative way of processing information. This processing evokes psychophysiological response through its influence on the limbic system, the center of emotions, feelings, and sensation (Guzzetta, 1995). Music provided immediate

reward experience to listener through the brain-reward center in the limbic system effect on releasing of endorphins and enkephalins, the body's natural mood altering substances and pain killers (Thaut, 1990 cited by Chlan & Tracy (1999). Thus, the mood is improved. Another response induced by music is relaxation response, which is impact on two main central nervous system components. First component involves an endocrine system. Music pass the auditory neural pathway to the hypothalamus impact on decreasing adrenocorticotrophic hormone (ACTH) from pituitary result in decreased cortisal level. Moreover, music can also affect the anterior pituitary to release endorphins and enkephalins (Well-Federman, 1999). Second component involves autonomic nervous system by decreasing sympathetic nervous system activity result in decrease physiological arousal such decrease heart rate, blood pressure, respiratory rate, metabolic rate, and muscle tension. In conclusion, music therapy can promote both physiological and psychological relaxation to the listener.

In cancer patients with pain, anxious state can evoke the physiological arousal via the stress response result in pain. Moreover, anxious state can alter the individual's ability to perceive noxious stimuli result in diminishing pain threshold and increase perception of pain impact on intensify pain. Music therapy can alleviate pain by inhibiting of this mechanism. Music therapy can modified thought to evoke relaxation response rather than stress response. The relaxation response can decrease physiological arousal via sympathetic nervous system and enhance the

releasing of endorphins and enkephalins result in decreasing of pain and anxiety. Moreover, the focus attention on the sound of music can distract the patients away from pain result in decrease perception of pain.

Music therapy in clinical setting

Music therapy has been used in clinical setting as a therapeutic intervention to help heal the body and mind for many years. Member of health professionals conducted research related to the effectiveness of music therapy for a variety of patients in numerous settings to achieve several health outcomes. From these research studies, music was found to be effectively in producing positive outcome, such as reduce stress and anxiety, improve mood, promote relaxation, reduce pain, and decrease nausea and vomiting

Effects of music intervention in older adult patient

Rossi (1993), McCloskey and Bulechek (2000) and McCaffrey and Freeman (2003) defined music intervention as helping older people to achieve a specific change in behaviour, feeling or physiology. There are eight areas where change may occur:

(1) Physical functioning (PF): Previous studies have shown that listening to music can increase physical functioning through increased motivation to exercise (Bernard 1992), such as distances walked (Becker et al. 1995). Hamburg and Clair (2003) found that the use of music to facilitate movement was based on the

mechanism of entrainment: movements entrain, or become synchronized, and develop rhythm. As a basic element of music, rhythm has perceptual and physiological attributes that influence the control of movement (Hurt et al. 1998). Thus, the use of music could enhance repetitive exercise training, thereby improving physical functioning (Gfeller 1988).

(2) Daily role activity limitations due to a physical problem (RP): Butler and Butler (1997) demonstrated the benefit of therapeutic music using frequencies that stimulate resonant vibration in human muscle fibre and the nervous system. Thus, people can restore their daily role activities after improving their physical health.

(3) Bodily pain (BP): McCaffrey and Freeman (2003) demonstrated that listening to music can reduce chronic osteoarthritis pain in community-dwelling elders.

(4) General health (GH): Health is viewed not as a dichotomy but as a continuum, with all points along the continuum being viewed as part of the ‘normal’ human condition. These kinds of activity have sometimes been cited, perhaps rather glibly, as examples of ‘self-therapy’ (Sloboda 1989b, 1992).

(5) Vitality (VT): Studies have indicated that music can enhance physical rehabilitation in older people who have had strokes (Thautet al.1995). This implies that music an facilitate enjoyment during exercise programmes and may subsequently facilitate adherence to the programmes.

(6) Social functioning (SF): Gerdner and Swanson (1993) showed that music can reduce situational anxiety and create statistically significant mood changes, facilitating communication and improving mobility. Thus, through music interventions, meaningful communication can be re-established between people, family and staff. Other research has shown that music can facilitate social integration for older, physically frail people (Palmer 1997), well older people (Adams1995), people with dementia and their spouses (Clair & Ebberts 1997).

(7) Emotional problems (RE): People had reduced levels of well-being and a higher risk of functional impairment and mortality. Hsu and Lai (2004) have shown the effectiveness of soft music for the treatment of major depressive disorder inpatients in Taiwan. Depression improved weekly, indicating a cumulative effect on improving emotional problems and restoring usual role activity. Burns (2001) examined the effect of 10 weekly sessions using guided imagery and music listening on the stress levels of individuals with a history of cancer. He found that there was a statistically significant improvement in mood for the music group over the course of the study, and that it continued to improve at 6-week post-treatment follow-up.

(8) Mental health (MH): Kwon et al. (2006) demonstrated that a music intervention is an effective method for reducing depression for people with leg fractures. Bright (1997) proposed that music can be helpful in reorientation, rebuilding social links and raising morale. He found that musical perception could be retained at varying levels into the late stages of dementia. Through music

intervention, meaningful communication can be re-established between clients, family and staff (Kneafsey, 1997).

How to use music therapy activities

The music will be used for the treatment of symptoms of various diseases and music can help relax and reduce anxiety or stress to a person to be normal. Music therapy method daily use for people can be done four methods that are listening, singing, and dancing (Binson, 2013). However, most of this research will be discussed in detail only music therapy in a form of listening music. This study forms the steps that are appropriated to be used to the conditions and needs of older adults with cancer while undergoing chemotherapy.

Listening

Listening for relaxation: When stress, music that should to choose need to be in their favorite genre such as music in slow syllables sounding: waterfall, bird sound, grasshopper, and cicada sound. It can be listening to the smoothing sounds of the band to record available on the market. It is important to pose the body in such a way that the muscles can be relaxed with no signs of any contracting. It could lie down on the patio or lawn that can see the sky. Then, the brain is much more serene.

Listening for entertainment: When people get severe of depression, loneliness or in an atmosphere of silence, which resulted in a negative prospect such as when driving, the kind of music that might be chosen must consider the fast

temp. It could be dance music or music that is upbeat invited to move to the beat. This will help you feel more energetic. However, you should explore the kind of music that matches the preferences of each individual because each has a different taste in music.

To select a style of music that will be used to listen to this relaxation, music has to be suited the preferences of the listener. It should study the background of the audience and which kind of music they like and lead to the happiness. Moreover, the volume should be directed to the music (Binson, 2010).

In this study will be choosing listening to preferred music for the cancer patients. According to a survey of music therapists and hospice nurses (Groen, 2007), music listening was the most frequently reported technique used to treat pain by music therapists (93%), especially for chronic pain symptoms. The use of music listening is described in the following section. Similarly, recorded music listening is inexpensive, noninvasive, easily utilized in a busy oncology setting (Bulfone et al., 2009). The researchers suggested that music listening might reduce anxiety and physiological arousal, enhance a sense of well-being and control, and therefore, improve the quality of life of breast cancer patients

Burns, Sledge, Fuller, Daggy, and Monahan (2005) studied 65 cancer patients' interest in music therapy in order to determine the preference for particular types of music therapy interventions (e.g., receptive, interactive, none) in conjunction

with specific individual characteristics: 68% were interested in music listening, 17% preferred music making, and 15% were not interested in either type.

Moreover, Music preference and the perceived importance of music in the lives of participants may influence the response to music-listening interventions. Huang (2006) studied the effect of music listening on cancer pain with 126 hospitalized patients, randomly assigned to an experimental group with music or a no-music control group. Experimental group participants were given the choice of harp and piano music or music specific to their own culture (folk or religious music). Patients listened to 30 minutes of their preferred music, while the control group rested in bed. Participants in the experimental music-listening group had significantly less pain sensation and distress than the control group.

Another study, using survey methodology, examined the impact of patient preferred music in pain management (Mitchell, MacDonald, Knussen, & Serpell, 2007). The researchers, from surveys with 318 chronic pain sufferers about uses of music for pain management, found that listening to preferred music helped distract from pain sensations and improved quality of life.

A form of music therapy activities

1 . Individual Music Therapy: The advantage individual activity is that the activity can be done suddenly whenever it is practical. This is ideal for those who do not like to be in social or disorders that have to be in control of the music

therapist. However, this can be used for regular music therapy into the personal satisfaction.

2. Community Music Therapy: This kind is for those who cannot use music therapy in the form of individual activities. The advantage of the group or community music therapy is to be treated according to the principles of the group. The readiness of the community causes the exchange of ideas and helps relieve loneliness.

Choosing the type of music to be used in the treatment is often questioned in the minds of many people. In fact, the choice of what kind of music would be the satisfaction of therapy is important because if it can effect and meet the needs of music therapy activities which is objectives of music therapy.

In this study will be use individual music therapy. The patient will have the opportunity to choose the song separately with their music preference by themselves. The detail of the song will be listed with the patients' name and the name and information detail will be label on the MP3 players in each individual. The individual's music preferences and accuracy in terms of the choice of music are essential considerations that contribute to the stated therapeutic effect (Engwall & Duppils, 2009)

The people admitted with no background of music are not the issue of the use of music therapy because music therapy could be allocated for various activities, but what is more important that is taking into account of the situation and

the need to treat specific diseases. Therefore, patients are a great help in deciding what type of music their needs and relate with the activity in the treatment of the individual (Binson, 2010).

Music therapy procedures

The music therapy is required to be provided with the opportunity to receive treatment of various diseases in each case. Therefore, it does not appear to be a standard format for music therapy used. Music therapist will be cooperating with doctors, nurses and occupational therapists in order to evaluate diagnosis and decide to plan an event or activity in each treatment. This practice is shown a step below.

1. Study of the background of patients

1.1 General Information

1.2 Background information on disease symptoms and treatment.

2. Diagnosis to create treatment planning.

A working group consisting of doctors and nurses diagnose the common diseases. Physical therapists, occupational therapists, and music therapist provide the suggestion of the possibility of using music therapy to meet the objectives of the treatment.

3. Treatment Plan

The working group from above will be working together in the planning phase for the appropriated symptom of the condition being treated, choice

of instruments, the clinical approach , and the design assessment methods for monitoring.

Music therapists will be planning activities to meet the satisfaction of the therapy and to make the treatment effective with the cooperation of the therapy.

4. Practice Sessions

When planning treatment is done, in an action musical therapist should have physical therapy or psychotherapy in operating aid in order to consult on the physical or mental disorders.

5. Evaluation and monitoring of therapy.

Evaluation and monitoring are important steps that are portrayed in music therapy activities. The evaluation will help determine the activities that are effective in helping treat for the intended location or not. In addition, follow-up in each event at every event is important to review that the participants were satisfied with the treatment and cooperation as well as the benefit from the event. However, assessment and monitoring will contribute to the success of exploration activities. It also helps in processing of problems and barriers to the development of music therapy activities to comply with the conditions and needs of the recipient following treatment.

Processes and forms of music intervention in older patients with cancer.

Prior research on therapeutic uses of music and clinical music therapy

identify benefits to cancer patients in meeting physical, psychological, and social needs. Therapeutic uses of music may include receptive (music listening) and interactive (singing, playing, composing, moving) interventions when addressing goal areas (Burns et al., 2008).

Following the biopsychosocial model, music may affect physical functioning of cancer patients, including perceived pain (Beck, 1991; Flaugher, 2002; Kerkvlier, 1990; Krout, 2003; Magill, 2001; Siedliecki & Good, 2006), stress (Pelletier, 2004), nausea and emesis (Ezzone, Baker, Rosselet, & Terepka, 1998; Standley, 1992), fatigue (Boldt, 1996), perception of disability (Siedlecki & Good, 2006), and immune system functioning (Burns, Harbuz, Hucklebridge, & Bunt, 2001).

It is therefore important that the care of cancer patients incorporates services that help meet patients' psychological, social and spiritual needs. Music has been used in different medical fields to meet such needs. Research on the effects of music and music therapy for medical patients has burgeoned during the past 20 years and has included a variety of outcome measures in a wide range of specialty areas (Dileo 2005). For adult, as well as pediatric cancer patients, music has been used to decrease anxiety prior to or during surgical procedures (Burns 1999; Haun 2001; Pfaff 1989), to decrease tension during chemotherapy or radiation therapy (Clark 2006;Weber 1996), to lessen treatment side effects (Bozcuk 2006; Ezzone 1998; Frank 1985), to improve mood (Bailey 1983;Barrera 2002; Burns 2001; Cassileth 2003), to enhance pain management (Akombo 2006; Beck 1989), to improve immune

system functioning (Burns 2001; Camprubi 1999) and to improve quality of life (QoL) (Burns 2001; Hilliard 2003). When examining the efficacy of music interventions with cancer patients, it is important to make a clear distinction between music interventions administered by medical or health care professionals (music medicine) and those implemented by trained music therapists (music therapy).

A substantive set of data (Dileo 2005) indicates that music therapy interventions with medical populations are significantly more effective than music medicine interventions for a wide variety of outcomes. This difference might be attributed to the fact that music therapists individualize their interventions to meet patients' specific needs, more actively engage the patients in the music making, and employ a systematic therapeutic process including assessment, treatment and evaluation. As defined by Dileo (Dileo 1999), interventions are categorized as music medicine when passive listening to pre-recorded music is offered by medical personnel. For example, a CD may be offered to a patient for relaxation or distraction; however, no systematic therapeutic process is present, nor is there a systematic assessment of the elements and suitability of the music stimulus. In contrast, music therapy requires the implementation of a music intervention by a trained music therapist, the presence of a therapeutic process, and the use of personally tailored music experiences. These music experiences include:

- listening to live, improvised or pre-recorded music;

- performing music on an instrument;
- Improvising music spontaneously using voice and/or instruments.
- Composing music; Music combined with other modalities (e.g. movement, imagery, art) (Dileo 2007).

Intervention information

- Type of intervention (e.g. singing, song-writing, music listening, music improvisation);
- Music selection (detailed information on music selection in case of music listening);
- Music preference (patient-preferred versus researcher selected in case of music listening);
- Level of intervention (music therapy versus music medicine as defined by the authors in the background section);
- Length of intervention;
- Frequency of intervention;
- Comparison intervention.

There is no standard pattern for the form of music therapy, but in this research, the research and design treatments will be designed to be appropriated for older people with cancer following the process of Binson Bussakorn (2010).

1. Study the background of the therapy.

Before using music therapy, the researcher will evaluate patients who would like to use music therapy for the treatment. First, the researcher will consider the needs and readiness of using music therapy. Then, the music experience will be explored regarding musical ability, type of music preference, and background information on diseases, symptoms, and treatment of patients. The factors that make pleasure to listen to music based on age, if listeners are listening to his favorite music, or as they remembered in the past which gives the familiar song or the musical event easier, it will create a warm impression (Binson Bussakorn ,2010).

2. Diagnostics to treatment planning.

A working group consisting of doctors and nurses diagnose common diseases. Researchers and music therapist will help suggest the possibility of using music therapy to meet the objectives of the treatment, and this does not interfere with the normal treatment of elderly cancer while receiving chemotherapy.

3. Treatment Plan

The music therapy that is appropriate for the symptoms of the condition being treated. The FACT-G version 4 will be used to assess the quality of life and

Thai Geriatric Depression Scale (TGDS) will be use to assess depression which has been studied and proved to be a tool that is appropriate for the elderly with cancer.

4. The practice sessions

In this process, the researchers implement the music therapy to elderly patients with cancer who are receiving chemotherapy. Researchers follow the steps below.

1. The researcher explained the purpose of music therapy to help relax, reduces anxiety and improves quality of life.

2. Describe a time that research will provide 20-30 minute sessions per day in patients receiving chemotherapy.

3. The researcher will encourage recipients to take off glasses and mask and recommend patients for a sitting position on a comfortable pillow covers. The patients should be in a well-ventilated room, appropriate temperatures, silent noise, adjust lighting in a room, and breathe deeply.

4. Music being used will be made sure that is the proper tools and equipment used to be available with convenient and secure.

5. Evaluating and monitoring the therapy.

Assessment and monitoring is an important step. Researchers will assess the reactions of the body and mind from the music. Music therapy can be repeated or not, and this will include assessing the pain and anxiety and using FACT-G version 4

to assess the quality of life and Thai Geriatric Depression Scale (TGDS) will be use to assess depression of cancer patients both before – after receiving the music therapy.

Devices used to listen to music (MP3 player, earphones or headphone):

In this research, mp3 player will be the study device which is easy and inexpensive. MP3 player will be chosen with a good quality of sound and music. Music can be played back automatically. The music can be played as long as the listeners need to listen without being disturbed or stopped listening. The headphones used are the high quality headphones that are used with a sponge covering the headset to make private and not disturb others. To make it easier to use, the research team was selected the lists of the song to be the song lists of the patients' preference in each individual. The detail of the song will be listed with the patients' name and the name and information detail will be label on the MP3 players in each individual.

According to Chlan (1999), there are several types of equipment necessary for implementing a music intervention process. They include a music library, headphones, and tape players. Infection control issues must be considered before the implementation of music therapy, and nurses should determine whether their patients enjoy listening to music. If, patients who are intubated should be provided an adequate mode of communication, such as pen and paper or letter board, and reading glasses if needed. Patients should also be assessed for hearing

impairment and/or the ability to hear music through headphones (Chlan and Tracy,1999).

In addition, another concern about music intervention is adjusted volume. There was not study that explains the ideal volume of the music. Chlan and Tracy (1999) suggested that small portable cassette tape players with adjustable volume and bass controls are convenient, compact units for music intervention. However, one study reported that music volume for inducing relaxation should have a maximum volume level of 60 decibels (Staum & Brotons, 2000).

Moreover, The Cochrane review found that the positive effects of music were similar in studies in which patients selected the type of music and those in which patients did not choose the type of music (Cepeda, Carr, Lau, & Alvarez, 2006). It appears that the tempo of the music is the most important factor; slow and flowing music with 60-80 beats per minute has the most positive effect on patients (Nilsson, 2008). It has been suggested in the literature that music used therapeutically should be non-lyrical, consist predominantly of low tones, be comprised mostly of strings with minimal bass, and have a maximum volume level of 60 decibels (Staum & Brotons, 2000).

***Music used*:** Music that will be used in the activity will be the song which the older adult in the intervention group will have the opportunity to choose the song separately with their music preference for example name of the song, name of artist and style of the song by themselves.

Music preference including: patient's assessment for examples: Do you like to listen music? (Yes, No), Why do you like to listen to music? (For relaxation, stress reduction etc.), what type of music do you like? (Country, classical, new age etc.). Music preference is determined by culture and environment. In order to provide patients with their music preferences, numerous studies have asked a variety of patients to pick their preferred music. Music therapy interventions involving music listening may use researcher-selected music or patient-selected music, but patient preference must be taken into account.

Krout (2007) explain that consideration of music preference is an important factor when choosing what music to listen to as part of a relaxation experience or regimen, because music which is perceived to be soothing or relaxing to one 129 person may not be so for another. Nevertheless, there are several other factors that may be helpful to bear in mind when selecting music. The elements that are often found in music composed for relaxation and classical, include a slow and stable tempo (pace or speed), low volume level and soft dynamics, consistent texture (combination of sounds and instruments), absence of percussive and accented rhythms, gentle timbre (sound or tone colour), legato (connected) melodies, and simple harmonic or chord progressions (Silverman, 2010).

Ferrer (2007) investigated the use of live music on anxiety, negative reactions (fatigue, worry, and fear), and positive reactions (comfort and relaxation) with 50 cancer patients undergoing chemotherapy treatment. Participants were

randomly assigned to experimental (music) or control (standard care) groups, with experimental participants receiving 20 minutes of familiar, patient-preferred, live music during chemotherapy. Results indicated significant improvement in fear, anxiety, fatigue, relaxation, and diastolic blood pressure in the experimental group; no significant differences between groups were found for worry, comfort, heart rate, and systolic blood pressure.

In addition, the choice of music (patient-selected or researcher-selected) was the focus of several music-listening studies with cancer patients. Zimmerman, Pozehl, Duncan, and Schmitz (1989) found that patient-preferred music, along with the suggestion that music may help manage pain, may facilitate a relaxation response, thereby decreasing muscle tension and the perception of pain.

Music therapist: The study researcher will be working with music therapist because a systematic process of intervention wherein the therapist helps the client to achieve better health using musical experiences and the relationships that develop through them as dynamic forces of change (Bruscia, 1989).

Music therapists employ a variety of clinical music-based techniques to improve the quality of life for people with a variety of illnesses or disabilities, and use music and music-based interventions based on patient needs and preferences. The World Federation of Music Therapy specifically defines music therapy in the following statement: Music Therapy is the use of music and/or its musical elements (sound, rhythm, melody and harmony) by a qualified music therapist, with a client or

group, in a process designed to facilitate and promote communication, relationships, learning, mobilization, expression, organization and other relevant therapeutic objectives in order to meet physical, emotional, mental, social and cognitive needs. Music Therapy aims to develop potentials and/or restore functions of the individual so that he or she can achieve better intrapersonal and/or interpersonal integration and, consequently, a better quality of life, through prevention, rehabilitation or treatment. (WFMT, 2011)

Moreover, a music therapist is specially trained to utilize the therapeutic qualities of music to assist in meeting the needs and goals of patients. Although receptive music therapy interventions can be inexpensive and easily utilized in a busy hospital environment, interactive music therapy approaches allow more flexibility in the music and activities; takes music preferences into account; and engages participants physically, psychologically, and socially (Ferrer, 2007).

***Time for using music*:** In this study the music can be played 30 minute to listen without being disturbed or stopped listening because Another investigator explained that music has been found to significantly reduce state anxiety ratings (as measured by the Spielberger State Anxiety Inventory), when the therapy consists of 30 minutes of the patient listening to his or her preferred music (Chlan, 1998; Wong, Lopez-Nahas, & Molassiotis, 2001).

Music therapy and QOL

Receptive and interactive music therapy interventions may alleviate

physical and psychological symptoms and improve quality of life, an important outcome criteria when judging the impact of psychosocial interventions (Weis, 2003). Quality of life and health-related quality of life are somewhat different, and definitions may vary. Health related quality of life (HRQOL) focuses on quality of life in regard to illness and treatment, while quality of life (QOL) refers to all aspects of life, including cultural, political, or societal issues (Ferrans & Hacker, 2011). HRQOL involves physical, social, emotional, and functional well-being, all of which combine into perceived overall wellbeing (Ferrans & Hacker, 2011). Although some studies related to quality of life were discussed elsewhere in this review of literature because of the interaction with physical, psychological, and social functioning, still others indicate benefit in the areas of music and life quality.

Kruse (2003) identified several quality-of-life issues in a survey of music therapists in cancer care. The three most common goal areas were psychosocial needs, anxiety management, and pain management. Music therapists also reported using music: (a) to promote expression of feelings or emotions, (b) as a cue or prompt for relaxation, (c) to promote expression of spirituality or end-of-life concerns, (d) to promote cognitive processing and expression of thought, and (e) as a social catalyst for family or group interaction (Kruse, 2003). The music therapy interventions utilized were varied, depending on patient need, and included: melodic improvisation, group drumming, guided imagery, active music making, passive music listening, relaxation with music, and singing (Kruse, 2003).

The multifaceted nature of music affects physical, psychological, and social functioning of cancer patients and caregivers. Music may ameliorate physical effects such as pain, fatigue, nausea, and immune function, as well as psychological effects of stress, mood, anxiety, and quality of life. The selection of preferred and meaningful music, as well as the perceived importance of music in participants' lives, may influence response to research interventions. These studies inform the current study regarding choices of music, and appropriateness of music therapy interventions in order to measure the long-term effects of music therapy interventions on mood, coping, social support, and quality of life and the short-term effects on stress, pain, anxiety, mood, and quality of life for cancer patients and their caregivers.

Music therapy to patients with cancer.

Cancer affects all aspects of an individual that can be physical weakened (Dileo, 1999). The pain is usually a sign that something is wrong or injury to the body. When there is damage to the part of the body, the nervous system will flow along the nerves to the brain. When the brain receives these flows, body pain (Cancer Research UK, 2015) emotionally will occur. People often feel depressed and may be struggling particularly in finding ways to cope with this feeling, or perhaps find a way to deny cancer (Dileo, 1999). The patients will be scared and worried about what will happen. It may also worry about the side effects of treatment. Each person will have a different serious (Cancer Research UK, 2015) recognition. Each person tries to take the time to find medical information to understand the process of healing and life-

changing decision about keeping the social relations of the people. For many people who suffer from loneliness, they need encouragement and interaction with other people. The spirit in each person may interpret cancer in many aspects. The consequences of behavior ever made are the impact of cancer on either side and they may vary on an individual basis (Dileo, 1999).

Thus, to help increase the quality of life for cancer patients, the elderly who is received music therapy has been being discussed how music therapy and musical activities that fit elderly patients. This can be classified as a goal of music therapy for patients with cancer as follows.

1. To reduce the pain
2. To reduce depression
3. To reduce anxiety
4. To adjust the mood
5. To improve attitude and understanding.
6. To increase social skills
7. To increase the skills of self-control.
8. To increase self-esteem.
9. To enhance self-management skills when faced with stress.

2.6 RELATED RESEARCH

In cancer patients, music therapy has been used by several researchers to manage unpleasant symptoms include pain, nausea and vomiting, or anxiety. Music therapy can be used alone or in combination with other behavioral intervention to decrease those unpleasant symptoms. Some researches relevant to effectiveness of music in cancer patients are encompasses in this review.

In cancer patient receiving chemotherapy, Frank (1985) tested the effect of music therapy and guide imagery on anxiety and the degree and length of nausea and vomiting in cancer patient receiving chemotherapy. The subjects were 15 cancer patients receiving chemotherapy and had previously experienced nausea and vomiting within a 24 hours period after chemotherapy administration. Subjects listened to cassette musical tape and guide imagery during and after chemotherapy administration. The taped music consists of a variety of instrumental, classical and popular music collections, and each tape was 60 minutes in length. Anxiety was measured by the State-Trait Anxiety Inventory (STAI) before and 2 hours after treatment. Nausea and Vomiting Questionnaire, Form I was completed before treatment; Form II was completed after treatment at the time nausea and vomiting occurred. Form I of the questionnaire, consisted of eight items to determine the patient's past length and intensity of nausea and vomiting. Form II, consisted of the same eight questionnaires, measured the perceived length and intensity of nausea and vomiting during the experimental period. The study showed that anxiety and

perceived degree of vomiting was significantly reduced. Even though, duration of nausea was decreased, but did not reach statistical significance.

Ezzone et al (1998) tested the effect of music therapy on nausea and vomiting in cancer patients receiving high dose chemotherapy. The subjects were 33 patients undergoing bone marrow transplantation. All of them were randomly assigned to the experimental or the control group. Subjects in the experimental group listened to music for 45 minutes at 6, 9, and 12 hours after the start of chemotherapy infusion as an adjunct to usual antiemetic regimen. Subjects in the control group received usual antiemetic regimen only. Visual Analogue Scale in the form of thermometer scale was used to measure nausea, and the "feel bad" scale was used to measure the degree of nausea. Both measurements were measured at baseline and every eight hours after chemotherapy infusion. All episodes of vomiting were also recorded. Results revealed that subjects in the experimental group had significantly less nausea and vomiting than the control group.

For cancer patients with pain, Zimmerman et al (1989) tested the effect of relaxing music on pain reduction in patient with cancer. Forty patients with the diagnosis of cancer and chronic pain were recruited to the study. The subjects were randomly assigned to an experimental (n=20) or a control group (n=20). The experimental group received 30 minutes of their preferred type of relaxing music via head phone, and no treatment for the control group. The McGill Pain Questionnaire (MPQ) and pain Visual Analogue Scale (VAS) were completed by all subjects before

and 30 minutes after the intervention. The study revealed that the subjects who received music had significantly lower score of pain on MPQ and pain VAS as compared to those subjects who did not received music. Results of this study indicate that listening to relaxing music is effective in the reduction of pain in cancer patients. However, the sample size in this study was rather small, therefore, it is difficult to generalize the results to the population of cancer patients with pain.

The study of Beck (1991) was designed to evaluate the therapeutic use of music for decreasing pain in patients with cancer. The subjects were 15 outpatients with cancer who were documented cancer related pain. Crossover design with repeated measure was used for this study. The procedure can be viewed in four treatment phases. In phase one, baseline data were self-recorded by the subjects for three days. In phase two, subjects were assigned randomly to listen to their preference type of relaxing music as experimental intervention, or to listen to a slow-frequency 60-cycle hum as control intervention for 45 minutes twice daily for 3 days. In phase three, subjects crossed over into the alternate group for the next 3 days. Finally, in phase four, each subject returned to a follow-up baseline period for 3 days. Relaxing music consisted of seven categories including classical, jazz, folk, rock, country and western, easy listening, and new age. Measurement of pain and mood were rating by subjects before entry into the study, before and after listen to music. The study was indicated that there was a statistically significant decrease in pain by using music, but there was no effect on mood. However, the effect of music on pain

varied by individual; 75% had at least some response and 47% had a moderate or great response.

In Thailand, Wallabha Sangkasophon (1993) tested effects of music on pain and distress in cancer patients. The subject of this study consisted of 30 cancer patients with chronic cancer pain. Each subject received the intervention by listening to the soothing music for 30 minutes during experimental period, and not listening to the music during the control period. Johnson's Pain and Distress Scale was completed by the patient before and after intervention. Pain behavioral record form and interview form were completed by the researcher before intervention and 10, 20, 30 minutes after intervention. The result indicated that level of pain and distress intensity in cancer patient during music therapy period were statistically less than those during the control period. However, this study included only patients with mild pain, thus the effectiveness of music therapy in patients with moderate or severe pain is questionable.

In recent year, Evan (2002) conducted a meta-analysis to summarize current best evidence on the use of music in hospital. Nineteen Randomized control Trials that evaluated the effect of music in hospitalized adult patients were recruited in this study. The search of electronic database and reference lists were used for literature search. The outcomes that have been used to evaluate the effectiveness of music therapy included: anxiety, pain (severity of pain and analgesic usage), sedation usage, satisfaction, tolerance for invasive procedure, and mood. The results

revealed that the use of music in hospital patients can reduce their anxiety, produce a small reduction in the respiratory rate, and improve their mood. However, music does not have any impact on patients' heart rate or systolic blood pressure. The use of music during unpleasant or invasive procedures does not have any impact on patient anxiety, heart rate, systolic blood pressure, and the rating of the severity of pain. However, music may reduce the need for sedation and analgesia. Furthermore, the author suggested areas where further research in needed such as, the impact of music on the severity of pain and analgesic or analgesic use, and the effectiveness of music in specific populations. For cancer patients, the effectiveness of music for all outcomes evaluate as this review is also needed for further research. However, this review focused only a single episode of music therapy intervention and did not evaluated the length of time for therapeutic effect of music session. These disadvantages produce limited evaluation of the impact of music in hospitalized patient.

In conclusion, the literature review revealed that music therapy is an effective intervention for improving quality of life and decrease in elderly group of patient. Nevertheless, in Thailand, there has been little research to test the effectiveness of music therapy on elderly in cancer patient. Moreover, the meta-analysis indicates the need of knowledge about the impact of music in hospitalized elderly cancer patient. Thus, this research is designed to test the effectiveness of the effect of music

intervention for improving quality of life of older adult cancer patients undergoing chemotherapy.

CHAPTER III MATERIALS AND METHODS

3.1 RESEARCH DESIGN

Research design in this study was a randomized controlled trial, Pre-Post Test Design randomly selected sample by block of 2 randomization. The sample were divided into the intervention and control groups. This research was a randomized controlled trial, pre-posttest designed and the samples randomly selected by Block randomization with a block size of 2. The samples were divided into the intervention and control groups at the cancer research in an outpatient (OPD case) chemotherapy unit, Chulalongkorn hospital with a new cancer patient cases who have been diagnosed with cancer of colon and rectum, lung, and breast cancer aged 55-75 years who were received chemotherapy. The participants were needed at least two sessions of chemotherapy treatment. This study was used the survey to collect data. The surveys of the preferences in types of music was access to create a program to listen to music (Music Listening Program) and the quality of life for cancer patients by FACT-G: Thai version 4 with Thai Geriatric Depression Scale (TGDS) to detect depression in older adult cancer patients. The data was collected fourth times: the first time before the intervention implement, the second times after the completed intervention immediately, the third times and the fourth times as the same. The research implementation procedure as follow:

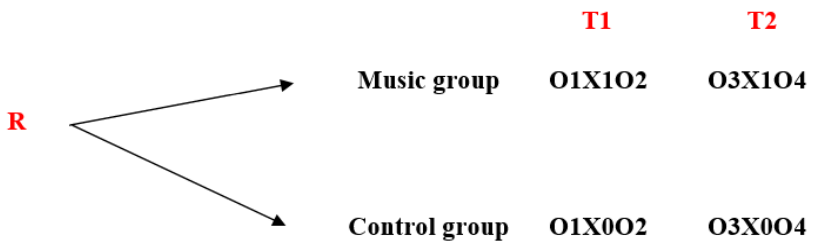


Figure 3.1: Study Design

X1 mean Music intervention group

X0 mean Standard routine care (control group)

T1 mean the 1st time of participatory selected music intervention program to the music intervention group

T2 mean the 2nd time of participatory selected music intervention program to the music intervention group

O1 and O3 mean the data collection at the pretest in the experimental and control groups before in the intervention (the 1st and 2nd data collection with questionnaires)

O2 and O4 mean the data collection at the pretest in the experimental and control groups after in the intervention (the 1st and 2nd data collection with questionnaires)

3.2 STUDY AREA

The study area was at outpatient chemotherapy center of King Chulalongkorn Hospital. The hospital was chosen because it was King Chulalongkorn Hospital is hold for the top rank of hospital in Thailand that has the advancement in treatment and research in terms of medical care and being the major hospitals in the treatment of cancer and there were high number of older adult cancer patient age 55 years old and older . According to the data record from King Chulalongkorn hospital reported that, the new patients who have been diagnosis with cancer in 2014 have been found a total of 2431 patients and in 2015 have been found a total of 2693 patients. Moreover, new data from cancer patients who receive chemotherapy treatment at the department on August 27, 2013 to March 17, 2015 have been found a total of 1853 patients and of these patients whose aged 55 years and over were found a total of 1180 (63.68%) people when compared another age group. (http://www.chulacancer.net/service-statistics.php)

3.3 STUDY POPULATION

The Target populations in this study are both male and female patients with cancer, aged between 55-75 years. The patient has been diagnosed by the doctor with the health problem of colon cancer, lung cancer, and/or breast cancer; and received chemotherapy.

The study populations in this study are both male and female patients with cancer, aged between 55-75 years. The patient has been diagnosed by the doctor with the health problem of colon cancer, lung cancer, and/or breast cancer; and received chemotherapy at the chemotherapy unit of the King Chulalongkorn Memorial Hospital.

The experimental group Cancer patients both male and female; aged between 55-75 years; who have been diagnosed by the doctor with the health problem of colon cancer, lung cancer, and/or breast cancer; and received chemotherapy in the chemotherapy unit at the King Chulalongkorn Memorial Hospital was placed in the experimental group. Under this group, the patients were given the music therapy program, the music player with headphones installed or earphones with music preference. They were listened to the music through headphones. The music play in the program depends on individual choices. The program was run for 20 of favorite songs, approximately 30-60 minutes.

The control group Cancer patients both male and female; aged between 55-75 years; who have been diagnosed by the doctor with the health problem of colon cancer, lung cancer, and/or breast cancer; and received chemotherapy in the chemotherapy unit at the King Chulalongkorn Memorial Hospital was placed in the control group. Under this group, the patients were not receive any music therapy. They were treated as normal patients.

The researcher was contact the patient's physicians and staffs in order to approach the participants.

Inclusion criteria

Cancer patients who have been diagnosed by a physician with the health problem of colorectal cancer, lung cancer and/or breast cancer.

- Aged between 55-75 years old, both male and female.
- Being out-patient (OPD case)
- New diagnosis or at the time cancer patients undergoing their first or second
- Receive chemotherapy at a time 30-1 hr./session
- Cycle of chemotherapy 1-2 weeks
- Ability to recognize and communicate in Thai language.
- Willing to participate voluntarily and cooperate in the research.

Exclusion criteria

- Having problems with the nervous and brain system.
- Having trouble with hearing.
- Having not able to control or help themselves.

Informed consent process

The researchers were explain all the study processes to volunteer patients. Information leaflets and consent form were provided to patients before deciding to participate in the study.

3.4 SAMPLE AND SAMPLE SIZE

Because there is not enough information to be used in the formula for calculating the number of samples, this research calculates the sample size based on Cohen's (1998). The researchers were chosen conventional medium effect size of .25, setting f = .25, α = .05, power =. .08, and u = 1 (Cohen, 1988). The calculation shows 52 samples per group. The total of sample was 104 people. The research of Evans's (2002) and Biley's (1988) provided the guidance on determining the sample size in that it is sufficient to test the different research studies on music therapy and an experimental research. The sample size in this study should be sufficient to more than 100 people.

In this research, researchers were test the difference in the quality of life of cancer patients, so the size of the total sample need for this study are 104 samples, and they are divided into two groups; 52 people per each group. The total sample size is added up 10% for dropout rate, so the samples requires in this study were 116 patients or (58 per group).

3.5 SAMPLING TECHNIQUE

Blinding

This study used a single blind to prevent bias. Researchers know all of the information of the patients, but the participants did not know that they were in either the experimental group or a control group.

Block of two randomization

This research is a randomized controlled trial, pre-posttest design. Patients were selected randomly into two groups using a block of two randomization to qualify the patients and unbiased comparison groups in the experimental group and control in the measurement as well as selection criteria. The participants were grouped by into 1: 1 ratio, and they randomly drawn up one by one. The first piece was meant to draw into the intervention group, and the second was into the control group.

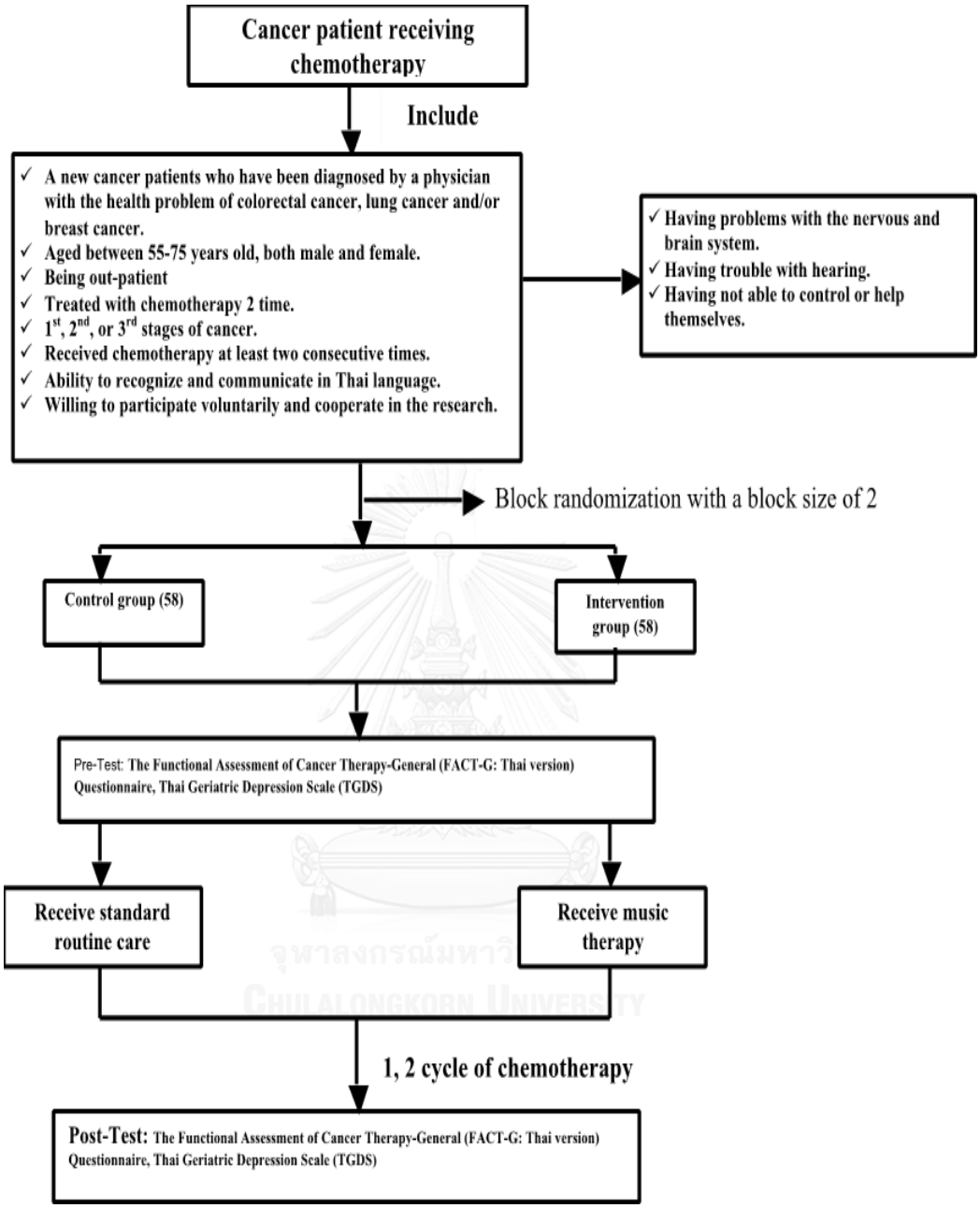


Figure 3.2: Sampling Technique

3.6 RESEARCH PROCEDURE

In this study, participatory selected music intervention (listening music) was used as a tool for improving the quality of life and decrease depression of older adult cancer patients undergoing chemotherapy .The study was conducted based on *music therapy activities developed by Binson* (2010) in the form of participatory selected music intervention model (listening music) which consists of the processes as follows.

1. Study the background of the therapy.

- Before using music intervention (Listening music), the researcher was evaluate patients who would like to use music therapy for the treatment. First, the researcher was considered the needs and readiness of using music therapy. Then, the researcher was review the literature, self-study related documents, the music experience was explored regarding musical ability, type of music preference, and background information on diseases, symptoms, and treatment of patients. The factors that make pleasure to listen to music based on age, if listeners are listening to their favorite music, or as they remembered in the past which gives the familiar song or the musical event easier, it was created a warm impression (Binson, 2010). In addition, many researches had found that an appropriate selection of types of music and other music preference are the key factors in promoting the well-being and quality of life among persons (Huei-Chuan S, Anne, M. C. and Wen-Li, L., 2010).

2. Diagnostics to treatment planning.

- A letter from the Institutional Review Board of the Faculty of Medicine, Chulalongkorn University was submitted to request permission for entering to the area of research, indicating the objective, duration of study, guidelines and procedures for data collection in this study.

- Setting up the meeting with the assistants to identify the process of the research. This included the description and the detail regarding the instrument use that was the listening music including any other basic of music for introduction and the understanding (This was cooperated from the faculty of Art, Chulalongkorn University with an expert in Thai music).

- The researcher were also described about the program to improve the quality of life of the older adult as well as discussed the problem and the idea with working group consisting of doctors and nurses. Researchers and music therapist were helped suggest the possibility of using music therapy to meet the objectives of the treatment, and this does not interfere with the normal treatment of elderly cancer while receiving chemotherapy.

3. Treatment Plan

- Working group consisting of doctors, nurses, researcher and music therapist were working together in the planning phase for the appropriated symptom

of the condition being treated, choice of instruments, the clinical approach, and the design assessment methods for monitoring.

- The researcher was coordinated with the head of department and the head of nurse on duty for qualifying the criteria. Researchers was conduct research and collect data at outpatient Vongvanij Building floor 4. Data were collected during office hours from 8:00 to 16:00 hours, and the special clinics from 16:00 to 18:00 hours at outpatient building 3 days a week (Tuesday, Wednesday, Thursday) for a total of 20 weeks.

- The researchers was collected the information on cancer cases by collecting information on the patients' medical records (OPD card) that have been diagnosed with colorectal, lung and breast cancer by selecting only patients in the age group 55-75 years and recently received the first chemotherapy treatment.

- When a patient visits a specialized cancer doctor after being treated successfully, the doctor or nurse of the unit involved were sent patients who qualify to meet the research criteria of the counseling in the department of chemotherapy unit.

- In this process, the researchers put the patient information to meet the criteria for classification by using a block of two randomization. Samples were divided into two groups. The intervention group, patients were received music therapy. The control group, patients were received treatment as usual.

The study was divided into two groups:

- ***Intervention group:*** the patients were given the music therapy program, the music player with headphones or earphones with music preference. They were listen to the music through headphones or earphones. The music play in the program depends on individual choices. The program will run for 20 of favorite songs, approximately 30 -60 minutes.

- ***The control group:*** Patients in the control group will not receive any music therapy. They will be treated as normal care, including vital signs observation, side effects from chemotherapy and complication observation.

- The researchers were introduce ourselves and clarify the purpose of research, the process of data collection to protect the rights of patients to participate in research and cooperation to join the study and respondents. If the patients are interest in participating in the study, researchers were provided informed consent form to patients and let them sign a document to participate in research projects.

- In addition, subjects who participated in the music intervention were in-depth interviews with the music preference. The music preference used in the music listening intervention was chosen by each patient in advance, according to their preference. Upon analysis, the patient-selected music was divided into 10 musical categories: Thai Folk songs (Luk Krung), Thai country songs (Luk thung), Traditional Thai music (Thai Derm), Thai urban songs (Puen Maung), Pop music

(String), Classical song, Chinese song, Modern song (Sakon), Modern instrumental song and Thai instrumental song.

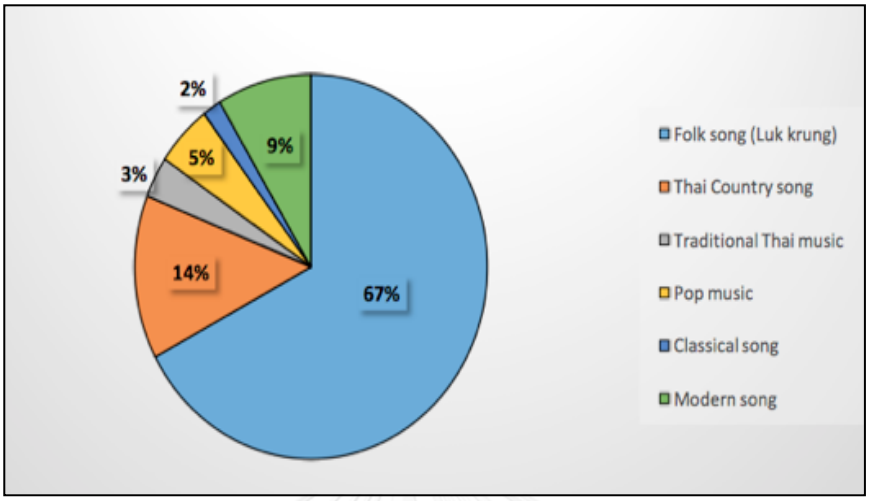


Figure 3.3 patient music preference type of music n=58

- The researchers were analyzed the song selection and sequencing music to patients undergoing chemotherapy in the coming days. According to Figure 2, The most kind of music that respondents preferred to listen was Look krung 39 (67.24%) followed by Look Thung 8(13.79%), 2(3.44%), Sakon song 5(8.6%), String 3(5.17%), Thai Derm 2(3.44%), Classical song 1(1.72%), Chinese song 0(0%), Puen Maung 0(0%), Modern instrumental song 0(0%), and Thai instrumental song 0(0%) respectively, Only 8.5% of the respondents reported that they had experienced in playing the music. Half of the elderly (50.6%) who had been experiencing the music considered that music led them to the relaxation. In addition, almost all of the respondents (96.6%) agreed that music caused the happiness, and 87.5% of all participant respondents also agreed that music could make them happier.

4. The practice sessions (music therapy activities)

- At the date of treatment, the samples who meet the criteria to receive the first chemotherapy were received all the processes as mentioned. The survey data includes the quality of life for cancer patients (FACT-G: Thai version) and Thai Geriatric Depression Scale (TGDS). These assessments were evaluated before and after chemotherapy in both groups.

- Participants in the experimental group were received music therapy program (Music player with headphones or earphones, which includes music samples, approximately 20 favorite songs for 30-60 minutes. Some samples may take longer than 60 minutes.

Instrument:

- MP3 player and earphones or headphones, Mp3 player in this study device which is easy and inexpensive. MP3 player was chosen with a good quality of sound and music. Music can be played back automatically. The music can be played 30 minute to listen without being disturbed or stopped listening.

- Earphones or headphones used are the high quality headphones that are used with a sponge covering the headset to make private and not disturb others. To make it easier to use, the research team was selected the lists of the song to be the song lists of the patients' preference in each individual. The detail of the song was listed with the patients' name and the name and information detail

was label on the MP3 players in each individual. This music preference of each patient was arranged by music therapist in order to create the song list for each patient preference.

Music used:

- Music that was used in the activity was the song which the older adult in the intervention group had the opportunity to choosing the song separately with their music preference for example name of the song, name of artist and style of the song by themselves. The song was listed from the music professional or music therapist for proving the appropriation and benefit for the elderly. The songs in the list were various kind of song including the song that elderly is familiar such as:

Sampling of the patient selected songs

Thai Urban Songs (Luk Krung):

1. Sane Ha (Feeling in Love) Artist: Suthep Wongkumhang
2. Lum Chao Phraya (Chao Phraya River) Artist: Suthep Wongkumhang
3. Reonphae (Boathouse) Artist: Charin Nunthanaporn
4. Duangjai (My Heart) Artist: Srisalai Suchatvudhi
5. Koy Lom Artist: Yarnyong Selanon
6. Nang Kreun Artist: Woranush Arree
7. Rak Bang Bai Artist: Ruenthong Thonglunthom

Thai Country Songs (Luk thung)

1. Rak Kao Thi Baan Keod (Old Love in the Hometown) Artist: Ekachai Srivichai
2. Saow Suan Tang (Suan Tang's Lady) Artist: Surapol Sombatcharoen
3. Samsib Young Jaew (30 Years Old Is Still Young) Artist: Yodrak Salakjai
4. Rak Khun Thao Fa (My Love to You Is Equal to the Sky) Artist: Sayan Sunya
5. Joob Leaw La Artist: Pumpueng Duengjan
6. Dum Noen Ja Artist: Surapol Sombatjareon
7. Nam Tarn Kon Keaw Artist: Karn Keawsupan

Modern song (Sakon)

1. All I have to do is dream Artist: Juice Newton
2. I'm a believer Artist: The monkees
3. Go Artist: Tina Charles
4. Take me home, country roads Artist: Jonn Denver
5. Imagine Artist: Jonn Denver
6. Sanfrancisco Artist: Scott Mckenzie
7. Why do I love you so Artist: Johnny Tillotson

Traditional Thai music (Thai Derm)

1. Lao Duang Deon (Name of the song related to Laotians) Instrumental music (Thai musical ensemble)

2. 2. Lao Chareon Sri Instrumental music (Thai musical ensemble)

Music therapist:

- The study researcher will be working with music therapist because a systematic process of intervention wherein the therapist helps the client to achieve better health using musical experiences and the relationships that develop through them as dynamic forces of change (Bruscia, 1989).

Time for using music:

- In this study the music can be played 30 minute to listen without being disturbed or stopped listening because another investigator explained that music has been found to significantly reduce state anxiety ratings (as measured by the Spielberger State Anxiety Inventory), when the therapy consists of 30 minutes of the patient listening to his or her preferred music (Chlan, 1998; Wong, Lopez-Nahas, & Molassiotis, 2001).

How to practice:

- The researcher explained the purpose of music therapy to help relax, reduces depression and improves quality of life. Describe a time that research was provided 30 minute sessions per day in patients receiving chemotherapy. The experimental group was received music therapy after the start of chemotherapy infusion as an adjunct to usual antiemetic regimen (Ezzone et al, 1998). All participants were received chemotherapy treatment occurred in a normal room or private room in the

Chemotherapy unit care with an adjustable bed. Before the intervention begin, the environment was prepared the patient and the environment (adjusting the lights, offering a blanket, turning off cell phones, and so on). The experimental group was received a MP3 player and earphones or headphones. The earphones or headphones were provided to decrease the environmental noise and to concentrate the patient to the flow of music. The researcher were performed after introduce and delivered by the researchers using MP3 players. The participants were selected their preferred music (10-20 songs/mp3), controlled volume and listened through an earphones or headphones connected to the MP3 player. Then, the patients listened the music through earphones for 30 minutes per session (Bailey LM, 1983). The researcher remain with the patients all through the time of music therapy session. After intervention (30 minutes) the headphone will be taken from patient.

- In the control group, the samples were not received any music therapy, and they were treated as normal.

5. Evaluating and monitoring the therapy.

- Researchers were assessed the reactions of the body and mind from the music. Rest of time 20 minute after their finish course of chemotherapy.

- For the evaluation all participants in both groups were give post-test. The assessment of the quality of life for cancer patients were used FACT-G: Thai version before and after the experiment in order to access whether or not patients' quality

of life' scores and Thai Geriatric Depression Scale (TGDS) were used to assess depression have changed after receiving chemotherapy. In the washout period, the patients received routine care by their ward nurses

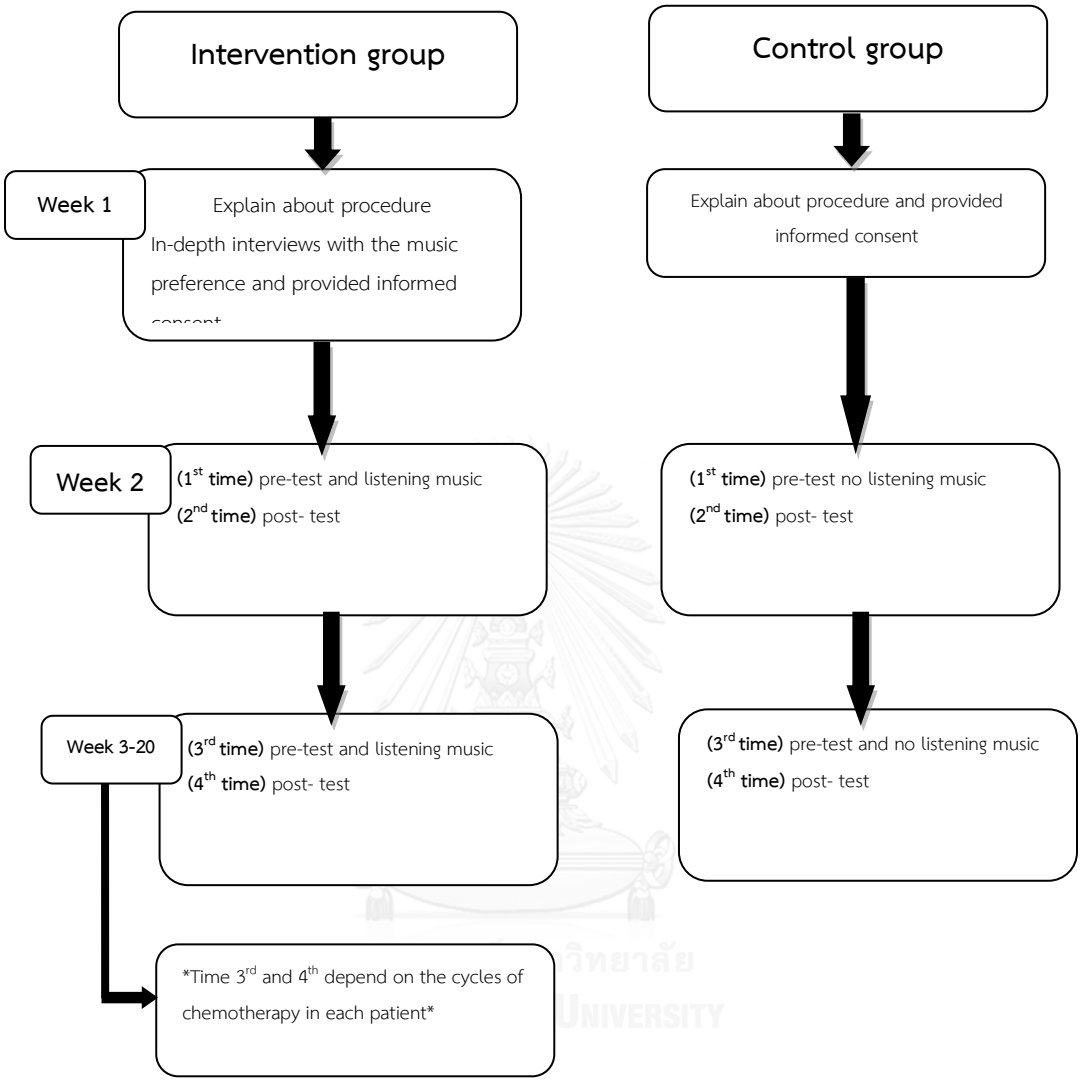
- The results of the tests between the two were compared. The experimental music intervention and physical therapy trials were expected to increase in the quality of life and decrease depression of older cancer patients. However, in the program of music intervention, the researchers would like to know the effectiveness of the program, so the second experiment in the experimental group and the control group were conducted. The two groups had already received chemotherapy to get an appointment for the second time with the researcher. The researchers were make an appointment again in the samples treated with chemotherapy followed by the date and time that the doctor prescribed. The appointment was not created any impacts on the treatment of normal subjects in both groups.

- However, in a program of music therapy, the researchers would like to know the effectiveness of the program. The cancer patient will receive chemotherapy more than two times between 2-3 weeks depending on the type and severity of cancer. However, if the qualified patients who are not able be treated at the unit chemotherapy for various reasons due to lack of time, away from home, no money for treatment, or some facility getting treatment at another hospital, they were excluded. These problems affect research, so the researcher needs to randomly

select qualified samples in the case of these problems occurring during the research implementation.

- The data obtained from questionnaires were used to collect, monitor and analyze for the statistics.

Figure 3.4: Diagram of intervention



3.7 MEASUREMENT TOOLS

3.7.1 Questionnaire

The research instrument included questionnaires with five parts as follows:

Part I: Socio-demographic information

This part consisted of twelve questions about the data of individuals Such as age, gender, marital status, income, education level, occupation, income, history of illness, history of alcohol drinking, history of smoking, regular drug used, and allergic drug.

Part II: Health status

This part consisted of three questions: physical examination (weight, SBP, DBP, pulse,), present illness, type of cancer and history of treatment.

Part III: Functional Assessment of Cancer Therapy General (FACT-G)

The quality of life measurement for cancer patients used in the study derives from the FACT-G: Thai version (Cella, 1997, which was translated by Ratanatharathorn V, Sirilerttrakul S, Jirajarus M, Silpakit C, Maneechavakajorn J, Sailamai P, et al (2001). The score of quality of life derives from the total score of the elderly patients receiving chemotherapy. The quality of life of consists of 27 questions covering the threat of Physical (Psy) well-being, Social (Soc) well-being, Psychology (Psy) well-being and Activity (Act) well-being. The measurement of quality of life among patient includes four parts in for two-week period. The assessment criteria derives from five rating scale (Likert scale 0-4) by a score of 0 (the quality of life in the least) to four points (in the very quality of life), which consists of the seven questions including the physical well-being which are all negative. The seven questions of social

welfare/family are all positive. The six questions of well-being, emotional/psychological are one on positive side and five negative questions. The seven questions of the happiness of the activities are all the positive side. All of the scores will be converted in the rating with a negative question before calculate a total score for quality of life.

Positive assessment on a five-level rating scale is shown as follow.

	Positive question	Negative question
Strongly agree	= 4	0
Agree	= 3	1
Not sure	= 2	2
Disagree	= 1	3
Strongly disagree	= 0	4

The overall rating of the quality of life in the range 0-108 points bringing the score to be divided into five levels by using the interpretation of the score.

Scores from 0 to 21.60 points means that the quality of life is extremely low.

Scores from 21.61 to 43.20 points means that the quality of life is low.

Scores from 43.21 to 64.80 points means that the quality of life is moderate.

Scores from 64.81 to 86.40 points means that the quality of life is high.

Scores from 86.41 to 108.00 points means that the quality of life is very high

Part VI: Thai Geriatric Depression Scale (TGDS)

Thai Geriatric Depression Scale (TGDS) the questionnaire consisted 30 items that the respondents answered to determine personal feeling in the last week events. The answer were “yes” or “no” to get a score 1 and 0 respectively. In contrast, 10 items which is item number 1, 5, 7, 9, 15, 19, 21, 27, 29, and 30 is positive feeling. If respondent answer “no” will be given 1 score and if respondent answer “yes” will be given 0 score. The total score ranged from 0 – 30 points. For criteria for depression level among Thais elderly are scoring as follows;

1) Normal or no depression 0 – 12 points

2) Mild depression 13 – 18 points

3) Moderate depression 19 – 24 points

4) Severe depression 25 – 30 points

Part V: Music preference

The music preference survey in order to create music listening program was used for music therapy. The researchers were evaluated the sample musical preferences (type of music they like and do not like). The reaction of the body and soul of the music may create more cheerful mood, which the studies in the past in the music used in the treatment of elderly cancer to reduce the pain. The study was found the use of various musical genres. The soothing music of classical music including Thai original song with lyrics and music by providing patients with choices of music and the songs selected manually. Because of differences in musical tastes and preferences, the samples were received the different songs as perceived and accustomed to the type of music and culture. Therefore, choosing the right music for sample, it is important for the treatment of patients. The researchers have realized the importance of this building that is suitable for older patients with cancer to achieve the second objective of the research. Because music affects the body, mind and soul of older patients, this result in the changes to the rhythm of the body such as heart rate, breathing and muscle function, and the party mood. It can also reduce anxiety behaviors, pain, stress, and help distract and calm, which is the ideal for elderly cancer patients who are receiving the chemotherapy.

These questionnaires of music preference were used to explore the participants' experiences including the music led them to the relaxation and music

could make them happier,, the experiences of music listening and the kind of music preference which referred to the types of music that the elderly preferred to listen comprised of 10 types: 1) “Look Thung” defined as Thai country music which typically reflects the rural lifestyle, religious beliefs, and cultural and social patterns of Thailand, 2) “Look Krung” known as Thai popular music or one of the international-style Thai music which is written in the form of a smooth poem explaining a sense of community with emotional tone of the soft, delicate, and intricate lyrics, but more polished and urban style compared to Thai folk music, 3) “Thai Daem” defined as Thai original music that is performed by the unique technique of Thai style which can be only instrument or instrument with singing, and 4) “Sakon” referred to the international popular music that is imported and being widespread in Thailand with its originally international for both lyrics and melody instruments as well as singer, songwriter, and music meaning. 5) “String” referred to the international popular music that is imported and applied in Thailand with its originally international instruments and melody, but in Thai version of lyrics, and the simple tone of song writer in Thai language. 6) “Peun Maung” defined as traditional and regular basis daily life activities of Thai people. 7) “Classical song” defined as one kind of music that is regular in the western. Classical music uses four group of instruments; string, woodwind, brass, and percussion which are all called “Orchestra.” This kind of music has the conductor for controlling the song. 8) “Chinese song” defined as use traditional Chinese instruments. 9) “Modern

instrumental song" define as the intentional which can be only instrument without singing. 10) "Thai instrumental song" define as the Thai music which can be only instrument without singing. This part consists of 13 questions. The feeling while listening to music was also included in the questionnaires.

3.8 VALIDITY AND RELIABILITY

Content Validity

Researchers were examine the quality of the tools by checking the validity of the content including survey data: a survey of preferences in styles of music in order to create a program of music listening to consider amendments to the research team and to determine the accuracy of the content. The content validity of the instrument will be improved by discussing with the three experts to inspect the correct, language and, validity, and then translated into Thai language before the pretest. Judging by the content validity of the questionnaire validated edits and suggestions from the experts. Calculated the index content validity (Content Validity Index: CVI) using the CVI greater than or equal to 0.8 based on the consistency between question the definition and determination of the comments are four levels: (Polit and Beck, 2004)

1. Means that questions do not fit the definition.

2. Means that questions need to be reviewed and improved

3. Means that questions need to be reviewed and improved slightly to be consistent

4. Means that questions are consistent with the definition.

The researchers were adapt the further actions to complete the research team on the recommendation of the experts in working language, cutting the question on the same issue and add to the cover of the content. In this study, there are many questions and the difficulties of the questions are varied.

Reliability

The questionnaires measuring quality of life for cancer patients (FACT-G: Thai version which was translated by Ratanatharathorn V, Sirilerttrakul S, Jirajarus M, Silpakit C, Maneechavakajorn J, Sailamai P, et al, 2001) were excepted to be tested because they are standardized and widely used with Cronbach's alpha coefficient of 0.75 to 0.90, so the research team has conducted a letter to Professor Dr. King Ratanabanchuen Tharatorn and faculty to request permission to use the questionnaire to test the quality of life for cancer patients in general.

3.8 DATA COLLECTION

The data collection was gathered by using face-to-face interview questionnaires by trained research assistants as the steps below:

1. The training course for research assistants was conducted by researcher and experts. They were trained for the interview and the intervention process in the necessary information.

2. The participants in the study were required to sign the consent form prior the participation.

3. The researcher and trained research assistants conducted the structural interview by using face-to-face interview, and all the data were checked for the completion of the questionnaire can withdraw from the study at any time. Their information was kept confidential.

3.9 DATA ANALYSIS AND STATISTICS

The obtained data was coded and entry into the computer by Researcher and research assistant. Double-data entry was done before analysis to check the error of data.

SPSS program version 16 was use to analyze obtained data. The significance level is accept at 0.05. The statistics were used as follows:

Statistical	Reason
1. Descriptive statistics (frequencies, means, and standard deviations)	To analyze frequency and percentage, mean and standard deviation of socio-demographic factors.
2. Chi – square (X^2) (Categorical data)	To compare the association of socio-demographic characteristics between the intervention and control group
3. T-test 3.1 Independent t–test (Continuous data)	-To compare mean score between the two groups on the baseline characteristics of quality of life and depression between the intervention and control group
4. Repeated measure analysis of Variance. (ANOVA)	To compare the change overtime in quality of life and depression (at the end of intervention 1, and 2 times comparison at base line).

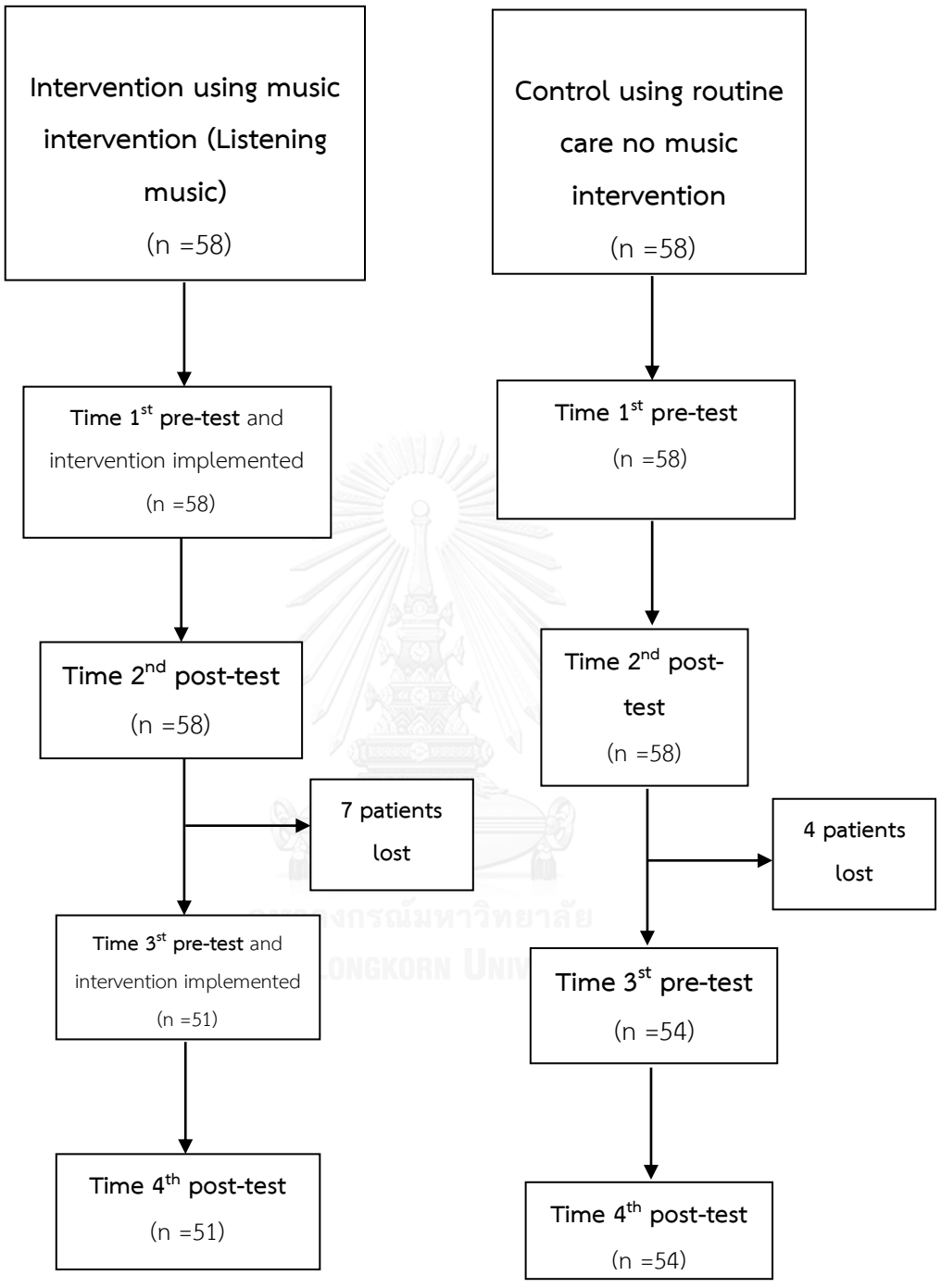
3.10 ETHICAL CONSIDERATIONS:

This study was approved by The Ethics Review Committee for Research Involving Human Research Subjects, Research Affairs Faculty of Medicine, Chulalongkorn University, Thailand. Participants received both written and verbal information before they agreed to participate. They had the right to refuse to participate in the study.

CHAPTER IV RESULTS

This chapter includes the results and the interpretation of the data from the study. This study was a randomized controlled trial study with Pre-Post Test design that randomly selected sample by block of 2 randomization that aims to aims to evaluate the effects participatory selected music intervention model to improve the quality of life by using FACT-G Thai version with Thai Geriatric Depression Scale (TGDS) to detect depression in older adult cancer patients. The study used the purposive sampling technique to select the participants. The study area was at Outpatient Chemotherapy Center of King Chulalongkorn Hospital. The samples were divided into the intervention and control groups at the Cancer Research in an Outpatient (OPD case) Chemotherapy Unit, Chulalongkorn Hospital with new cancer patient cases diagnosed with cancer of colon and rectum, lung, and breast, aged 55-75 years, patients on chemotherapy. A total of 116 elderly were enrolled in the study, both in intervention and control group (58 elderly in each group). During the time 2ndand 3rd of evaluation, 7 samples dropped out from the intervention group, and 4 samples dropped out from the control group. The reason were transfers to another hospital, change of treatment (such as: operation, radiotherapy) or death. Therefore, there were 51 participants remaining in the time of 4th evaluation for the intervention group and 54 participants remaining in the control group as shown in the flow chart of the participants (figure 4.1).

Figure 4.1 Flow chart of the study participants of the Music Preference Intervention Model



The results are presented in two parts: (1) baseline characteristics consisted of socio-demographic characteristics, (2) the quality of life of participants (FACT-G), (3) depression of participants (TGDS) and (4) the effect of participatory selected music intervention model to improve quality of life of older adult cancer patients undergoing chemotherapy.

4.1 BASELINE CHARACTERISTICS

Originally, there were 116 participants enrolled in this study. Of these, 105 (90.52%) completed the study. The number of participants in the intervention group were more males (51.0%) than females (49.0%) and had mean age of 62.5 ± 5.7 years, most of them were married (70.6%), graduated from primary school (47.2%) and had a monthly family income of 15,921 ± 19,037 Thai baht. Among the participants in the control group, they were more females (61.6%) than males (38.9%) and had mean age of 65.8 ± 6.8 years, most of them were married (92.6%), graduated primary from school (46.2%) and a had monthly family incomes of 14,209 ± 11,033 Thai baht (table 4.1.).

Table 4.1: General Characteristics of participants at baseline

General Characteristics	Intervention		Control group		P-value
	n	%	n	%	
Age					
≤ 60	22	43.1	13	24.1	0.95
61-91	22	43.1	26	48.1	
70-79	7	13.7	13	24.1	
≥ 80	0	0.00	2	3.7	
Gender					
Male	26	51.0	21	38.9	0.21
Female	25	49.0	33	61.6	
Marital Status					
Married	41	80.4	50	92.6	0.60
Single / Widow/ Divorced/Separated	10	19.6	4	7.4	
Educational Level					
No education	2	3.9	1	1.9	0.88
Primary School	24	47.2	25	46.2	
High School	9	17.6	8	14.8	
Diploma degree	4	7.8	7	13.0	
Bachelor degree	12	23.5	13	24.1	
Occupational					
Unemployed	12	23.5	15	27.8	0.41
Retired Employees	8	15.7	15	27.8	
Trading	6	11.8	7	13.0	
Agriculturists	7	13.7	2	3.7	
Labor	6	11.8	6	11.1	
Business owner	7	13.7	4	7.4	
Other	5	9.8	5	9.3	
Income (Baht/month) (Mean ± SD)	15,921 ± 19,037		14,209 ± 11,033		0.604

* P-value was calculated by using Chi-square test for nominal data and independent T-test for continuous data (accepted level is 0.05).

Most of the participants in both groups reported that they had a history of chronic illness (94.1% in the intervention group and 85.2% in the control group). More than half of them had never drank alcohol (66.7% VS 87.0%) about one third were regular or occasional alcohol drinker (31.4% VS 9.3%). A similar result for the history of smoking in both groups as most of them had never smoked (66.7% vs 88.9%), about one third were regular or occasional smoker (31.4% vs 7.4%), a quite significant difference between intervention group and control group. Most of the participants in both groups had regular drug use (88.2% in the intervention group and 85.2% in the control group). Some of the participants in both groups were allergic to drugs (7.8% in the intervention group and 13.0% in the control group). For the types of cancer, there was no significant difference between the different types of the cancer: Colorectal cancer (41.2% in the intervention group and 42.6% in the control group), Lung cancer (21.6% vs 32.5%), and Breast cancer (37.3% and 25.9%). The body weight was (Mean ± SD = 57.62 ± 11.38 kg. in the intervention group vs 54.05 ± 10.15 kg. in the control group), the height was (163.43 ± 7.73 cm. vs 159.61 ± 8.28 cm.). For the Systolic blood pressure (SBP) the participants in the intervention group had ≤110 mmHg (2.0%), 101-140 mmHg (52.9%), and ≥141 mmHg (45.1%). In the control group, Systolic blood pressure (SBP) was ≤ 110 (7.4%), 101-140 mmHg (74.1%), and ≥141 mmHg (18.5%). For Diastolic blood pressure (DBP), there was a significant difference between intervention group and control group: ≤ 60 mmHg (3.9% in the intervention group and 22.2% in the control group), 61-80 mmHg (35.3%

vs 48.1%), and ≥81 mmHg (60.8% and 29.6%). In the part of pulse/min**,** there was not a statistically significant difference between intervention and control group. ≤ 60 /min (5.9% in the intervention group and 1.9% in the control group), 61-100/min (92.2% vs 85.2%), and ≥100 min (2.0% and 13.0%). See table 4.2

Table 4.2: Comparison of Health Status among study population at baseline

Variables	Intervention		Control group		P-value
	n	%	n	%	
History of illness					
No history of chronic illness	3	5.9	8	14.8	0.13
Have history of chronic illness	48	94.1	46	85.2	
History of alcohol drinking					
Never	34	66.7	47	87.0	
Ex-drinker	1	2.0	2	3.7	
Recently Drink	16	31.4	5	9.3	0.01
History of smoking					
Never	34	66.7	48	88.9	
Ex-smoker	1	2.0	2	3.7	0.007
Smoker	16	31.4	4	7.4	
Regular drug used					
Yes	45	88.2	46	85.2	0.64
No	6	11.8	8	14.8	
Allergic drug					
Yes	4	7.8	7	13.0	0.39
No	47	92.2	47	87.0	
Type of cancer					
Colorectal cancer	21	41.2	23	42.6	
Lung cancer	11	21.6	17	31.5	0.33
Breast cancer	19	37.3	14	25.9	
SBP mmHg					
≤ 100	1	2.0	4	7.4	

Variables	Intervention		Control group		P-value
	n	%	n	%	
101-140	27	52.9	40	74.1	0.09
≥141	23	45.1	10	18.5	
DBP mmHg					
≤ 60	2	3.9	12	22.2	
61-80	18	35.8	26	48.1	0.01
≥ 81	31	60.8	16	29.6	
Pulse rate/ min					
≤ 60	3	5.9	1	1.9	
61-100	47	92.2	46	85.2	0.66
≥ 100	1	2.0	7	13.0	

* P-value was calculated by Chi-square test and independent t test for continuous data (accepted level is 0.05).

The difference between intervention group and control group was significant in history of alcohol drinking, history of smoking, Systolic blood pressure and Diastolic blood pressure.

4.2 QUALITY OF LIFE OF THE PARTICIPANTS

Quality of life can be grouped into levels by the score of FACT-G questionnaire which has five levels to identify the score. This study found that at 1st time of the intervention, most of participants in the intervention group were of a high quality of life level (84.3%) followed by ta moderate quality of life level (15.7%). In the control group, most of the elderly participants' QOL score were also of a high level (68.5%) followed by moderate quality of life level (29.6%), while a very high level was found only at 1.9%. At 2nd time of the intervention, most of the

participants' QOL score in the intervention group was found at a high level (70.6%) or at a very high level (27.5%), and at a moderate level 2.0%. In contrast, in the control group, most of the participants (63.0%) had a quality of life at a moderate level while the high quality of life was 37.0%. At 3rd time of the intervention, most of the participants in the intervention group had a QOL score at a high level (78.4%), moderate quality of life level was 13.7%, and very high level was 7.8%. In the control group, most of the participants were at a high level (98.1%), and only 1.9% at a moderate level. At 4th time of measurement, most of the participants in the intervention group had a QOL score at a high level (68.6%), or very high level (12.4%), while at moderate level was of 5.9%. In the control group, the most frequent level was the moderate level (59.3%), the high level was of high 40.7% (see table 4.2.)

Table 4.3: Number and percent of participants in each level of QOL at 1st, 2nd, 3rd and 4th.

Evaluation	Intervention					Control				
	Extremely Low (%)	Low (%)	Moderate (%)	High (%)	Very high (%)	Extremely Low (%)	Low (%)	Moderate (%)	High (%)	Very high (%)
1st Time	0(0.0)	0(0.0)	8(15.7)	43(84.3)	0(0.0)	0(0.0)	0(0.0)	16(29.6)	37(68.5)	1(1.9)
2nd Time	0(0.0)	0(0.0)	1(2.0)	36(70.6)	14 (27.5)	0(0.0)	0(0.0)	34(63.0)	20(37.0)	0(0.0)
3rd Time	0(0.0)	0(0.0)	7(13.7)	40(78.4)	4(7.8)	0(0.0)	0(0.0)	1(1.9)	53(98.1)	0(0.0)
4th Time	0(0.0)	0(0.0)	3(5.9)	35(68.6)	13 (12.4)	0(0.0)	0(0.0)	32(59.3)	22(40.7)	0(0.0)

4.3 DEPRESSION OF THE PARTICIPANTS

Depression can be grouped into levels by the score of the TGDS questionnaire which has four levels to identify the score. This study found that at 1st time of intervention, most of the participants in the intervention group were at a normal depression level (31.4%) followed by the moderate depression level (23.5%) the mild depression level was of 9.8% and the severe depression level was of 2.0% among the participants. In the control group, most of the older adult participants' depression score were at the moderate depression level (64.8%) and the mild depression level was found only in 35.2%. At 2nd time of intervention, most of the participants' depression score in the intervention group was at the normal depression level (68.6%) and moderate depression level was in 25.5% of the participants, while the mild depression was found in 3.9% and the severe depression level in 2.0%. In contrast, in the control group, most of participants (66.7%) had depression at the mild level, the moderate depression level was of 31.5% and the normal depression was of 1.9%. At 3rd time of intervention, most of the participants in the intervention group had a depression score at the normal depression level (62.7%), moderate depression level was 25.5%, and the mild depression level 11.8%. In the control group, most of the participants had a mild depression level (70.4%), and only 29.6% had a moderate level. At 4th time of measurement, most of the participants in the intervention group had a normal depression level (68.6%), the moderate depression level was of 17.6%, and the mild depression level11.8%, while

the severe level was in 2.0% of the patients. In the control group, the most level was the mild depression level (68.5%), moderate depression level was 29.6% and the normal depression level1.9% (see table 4.3.)

Table 4.4: Number and percent of participants in each level of depression at 1st, 2nd, 3rd and 4th

	Intervention				Control			
Evaluation	Normal (%)	Mild (%)	Moderate (%)	Severe (%)	Normal (%)	Mild (%)	Moderate (%)	Severe (%)
1st Time	33(31.4)	5(9.8)	12(23.5)	1(2.0)	0(0.0)	19(35.2)	35(64.8)	0(0.0)
2nd Time	35(68.6)	2(3.9)	13(25.5)	1(2.0)	1(1.9)	36(66.7)	17(31.5)	0(0.0)
3rd Time	32(62.7)	6(11.8)	13(25.5)	0(0.0)	0(0.0)	38(70.4)	16(29.6)	0(0.0)
4th Time	35(68.6)	6(11.8)	9(17.6)	1(2.0)	1(1.9)	37(68.5)	16(29.6)	0(0.0)

4.4 THE EFFECTS OF THE INTERVENTION PROGRAM

4.4.1 The effect of participatory selected music intervention model on quality of life of older adult cancer patients undergoing chemotherapy

Means of quality of life (QOL) for cancer patients by FACT-G scores including the standard error of the two groups were summarized including four (4) domains: Physical Well-being (PHY), Social (SOC), Psychology (PSY), and Activity (ACT). Furthermore, the mean values of quality of life scores and four (4) domains at each time are also described.

4.4.1.1 The effect of participatory selected music intervention model on the total quality of life score

Means of quality of life (QOL) for cancer patients by FACT-G scores including the standard error of the two groups are summarized in Table 4.5. The mean values of quality of life scores at each time are depicted in Figure 4.2

Between groups comparison

The intervention group presented significant differences from the control group ($P < 0.01$) at 2nd and 4th measurement. At 1st and 3rd measurement the total QOL was not significantly different between groups. The mean total QOL score appeared to be significantly increased in the intervention group compared to the control group at 2nd and 4th time of intervention as shown in table 4.5 and figure 4.2.

Table 4.5: Between groups comparison for the total quality of life score at each point measured.

Measurement outcome: QOL	Intervention		Control		P-value
	Mean	SE	Mean	SE	
Total Quality of Life (TQOL)					
Measurement 1st	71.63	6.86	71.20	8.91	0.78
Measurement 2nd	81.75	7.20	63.59	4.42	<0.001
Measurement 3rd	71.76	7.36	74.13	6.44	0.08
Measurement 4th	81.69	7.00	64.41	3.44	<0.001

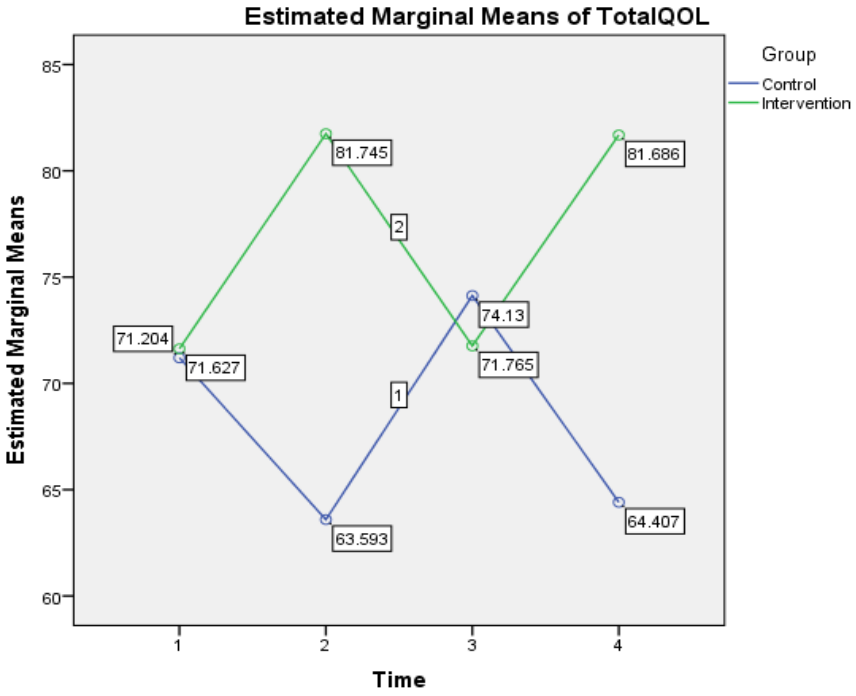


Figure 4.2: Mean of TotalQOL scores compare between groups at each point measured

4.4.1.2 The effect of participatory selected music intervention model on the total quality of life score: Physical Well-being domain

Between groups comparison

The physical well-being domain score significantly increased compared to the control group ($P < 0.05$) at all measurements. There was a significant difference between intervention and control group at every time point after intervention (see table 4.6 and figure 4.3.).

Table 4.6 Between groups comparison for the Physical Well-being domain (PHY) score at each point measured.

Measurement outcome: QOL	Intervention		Control		P-value
	Mean	SE	Mean	SE	
Physical Well-being domain					
Measurement 1st	15.10	2.68	17.28	3.54	0.001
Measurement 2nd	21.96	3.05	11.44	2.64	<0.001
Measurement 3rd	15.20	3.54	18.85	1.19	<0.001
Measurement 4th	21.29	3.52	12.67	3.16	<0.001

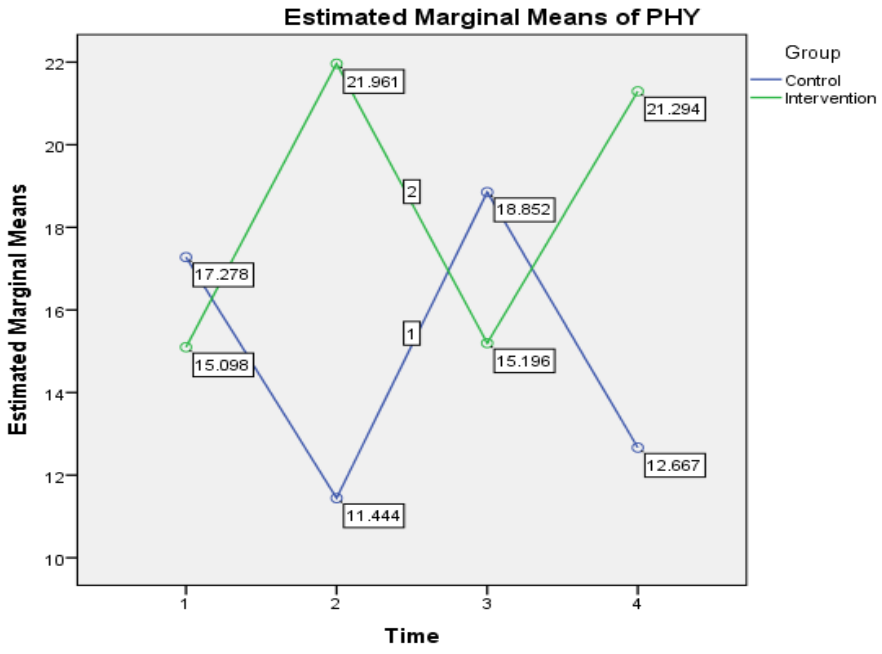


Figure 4.3: Mean of Physical Well-being domain scores compare between groups at each point measured

4.4.1.3 The effect of participatory selected music intervention model on the total quality of life score: Social well- being domain.

Between groups comparison

The social well-being domain score significantly increased compared to the control group ($P < 0.05$) at every point of measurement. There was a significant difference between intervention and control group at every point of time after intervention see table 4.7 and figure 4.4.

Table 4.7 Between groups comparison for social well-being domain (SOC) score at each point measured.

Measurement outcome: QOL	Intervention		Control		P-value
	Mean	SE	Mean	SE	
Social well-being domain					
Measurement 1st	19.73	2.45	20.98	2.12	0.01
Measurement 2nd	19.47	1.94	20.89	2.74	0.003
Measurement 3rd	19.43	1.90	21.46	2.88	<0.001
Measurement 4th	19.71	1.53	20.87	3.15	0.01

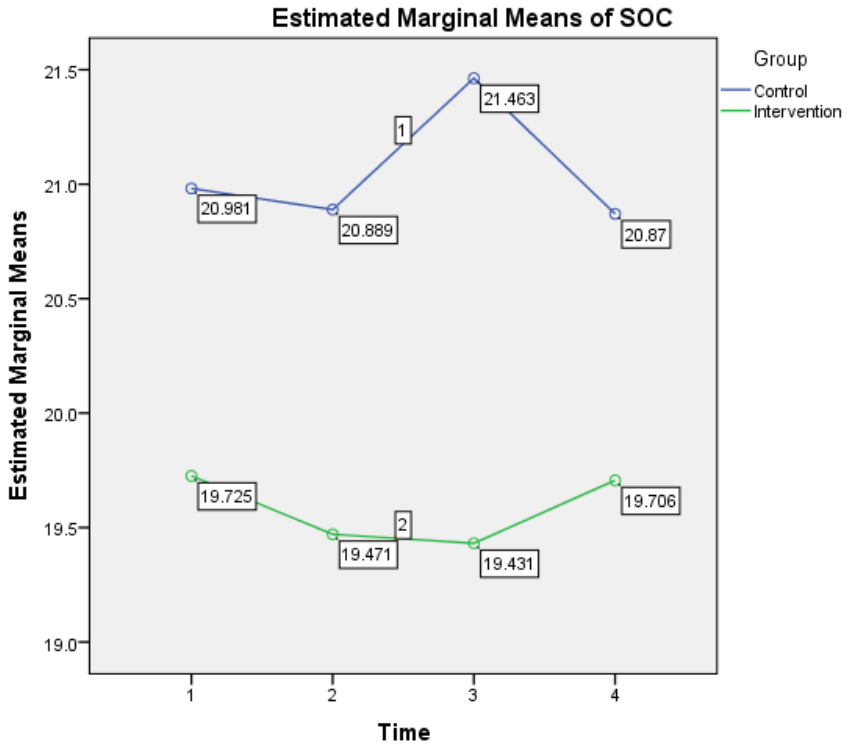


Figure 4.4: Mean of Social well-being domain scores compare between groups at each point measured

4.4.1.4 The effect of participatory selected music intervention model on the total quality of life score: Psychology well-being domain

Between groups comparison

In the psychology (PSY) domain score, it was found that the mean score among the intervention group was higher than the score in the control group at every measurement time. Moreover, the intervention group presented a significant increase compared to the control group ($P < 0.001$) at 2^{nd} and 4^{th} measurement (see table 4.8 and figure 4.5.

Table 4.8 Between groups comparison for Psychological well-being score at each point measured.

Measurement outcome: QOL	Intervention		Control		P-value
	Mean	SE	Mean	SE	
Psychological well-being domain					
Measurement 1st	16.76	2.52	15.00	2.17	<0.001
Measurement 2nd	18.31	2.51	14.54	2.20	<0.001
Measurement 3rd	16.86	2.47	15.04	1.16	<0.001
Measurement 4th	18.55	1.99	14.74	1.03	<0.001

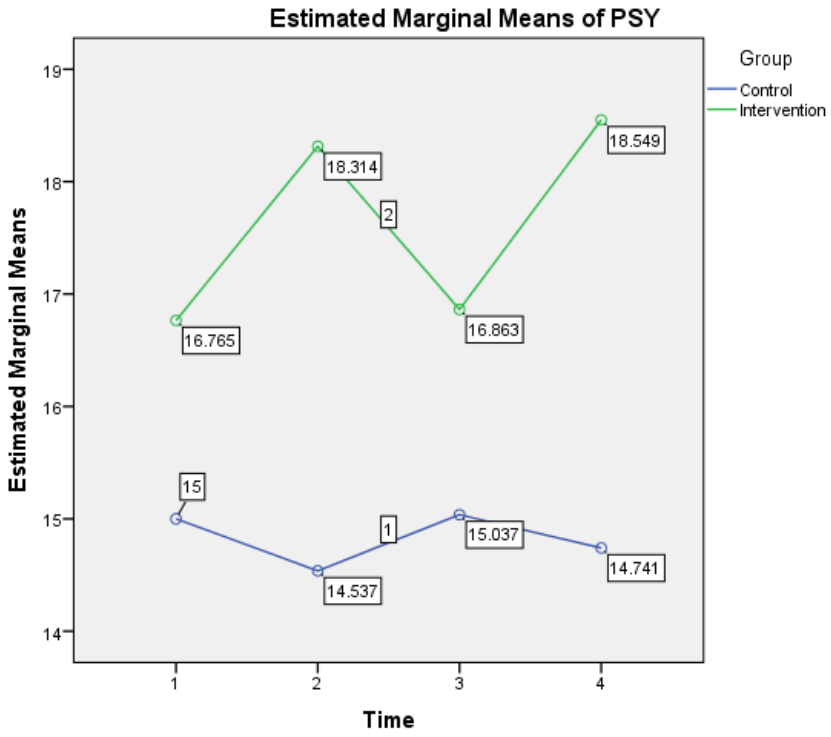


Figure 4.5: Mean of Psychological well-being domain scores compare between groups at each point measured

4.4.1.5 The effect of participatory selected music intervention model on the total quality of life score: Activity well-being domain

Between groups comparison

The activity domain score of the intervention group was higher than in the control group with a statistical significance ($p<0.05$) at all measurement times. Moreover, the intervention group presented a significant increase compared to the control group ($P < 0.001$) at 4th measurement (see table 4.9 and figure 4.6.).

Table 4.9 Between groups comparison for the activity well-being domain score at each point measured.

Measurement outcome: QOL	Intervention		Control		P-value
	Mean	SE	Mean	SE	
Activity well-being domain					
Measurement 1st	20.04	3.22	17.94	3.34.	0.001
Measurement 2nd	22.00	3.24	16.72	2.43	<0.001
Measurement 3rd	20.27	2.77	18.78	3.63	0.02
Measurement 4th	22.14	3.21	16.13	2.38	<0.001

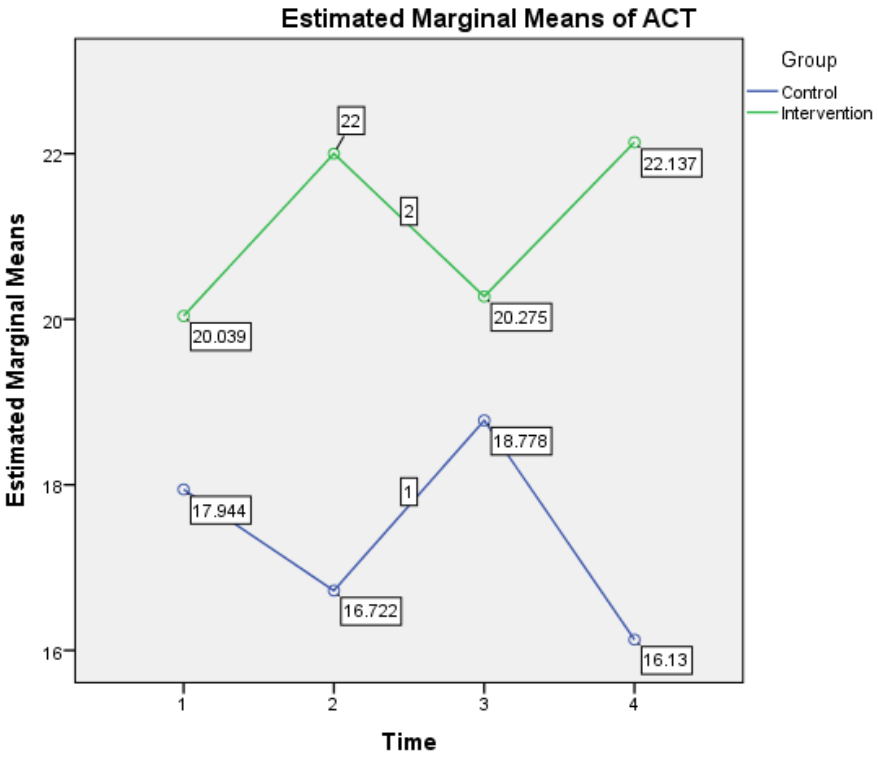


Figure 4.6: Mean of Activity well-being domain scores compare between groups at each point measured

4.4.2 The effect of participatory selected music intervention model on depression on the older adult cancer patients undergoing chemotherapy

Means of depression score for cancer patients by Thai Geriatric Depression Score (TGDS) including the standard error of the two groups are summarized in Table 4.6. The mean values of depression scores at each time are depicted in Figure 4.6.

Between groups comparison

In the intervention group, the depression scores was significantly lower than in the control group (P < 0.05) at every point measured. A significant decrease was also found in the intervention group (P < 0.05) at 4th measurement (see table 4.10 and figure 4.7.).

Table 4.10 Between groups comparison for the depression score at each point measured.

Measurement outcome: Depression	Intervention		Control		P-value
	Mean	SE	Mean	SE	
Measurement 1st (Baseline)	71.63	6.86	71.20	8.91	0.001
Measurement 2nd	71.76	7.36	74.13	6.44	0.08
Measurement 3rd	81.75	7.20	63.59	4.42	<0.001
Measurement 4th	81.69	7.00	64.41	3.44	<0.001

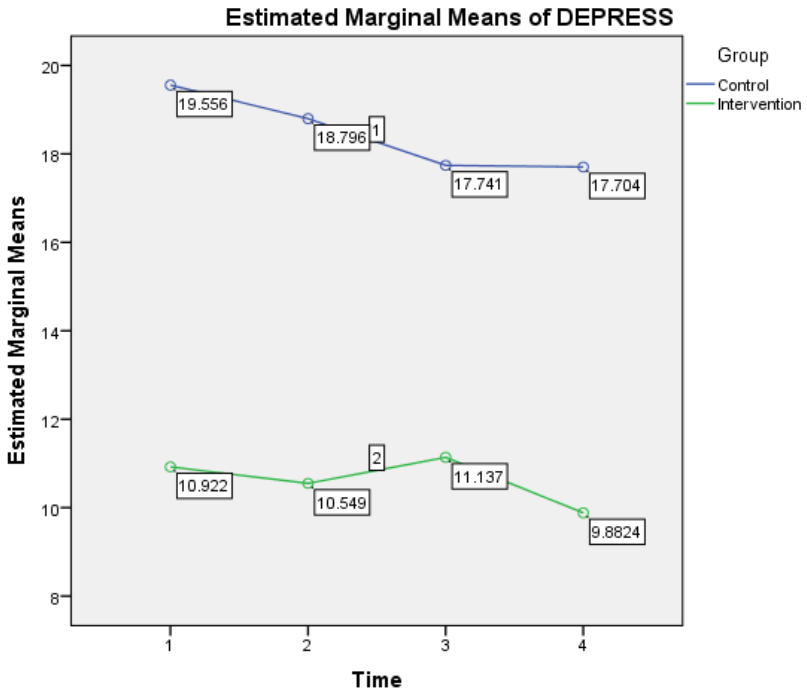


Figure 4.7: Mean of depress scores compare between groups at each point measured

The mean differences and time 3 and 4 were shown in the intervention group, the depression score significantly decrease (P < 0.05) between 3 and 4 measurement, but it had not significantly change between 1 and 2 measurement. Means difference of depression at the points of measurement time were depicted in table 4.11

Table 4.11 Mean differences of depression between times and at each time point measured.

Comparing between times	Intervention			Control		
	Mean Difference	SEM	*P*	Mean Difference	SEM	*P*
Time 1st VS Time 2nd	0.373	0.35	0.296	0.76	0.21	0.00
Time 3rd VS Time 4th	1.255	0.43	0.006	0.037	0.14	0.80

*SEM=standard error of mean, *Time 1st and time 3rd = pre-test 1st, 2nd / Time 2nd and 4th = pot –test 1st, 2nd

4.4.3 The overall effects of intervention on quality of life and depression among study population by using repeated-measures ANOVA.

The result from the analysis of general linear model measures ANOVA shown that the intervention group had significant difference in the total QOL score and the 4 domain and depression compare with the control group as shown in table 4.12

Table: 4.12: The overall effects of intervention on quality of life and depression among study population by using repeated-measures ANOVA

Variables	Type III Sum of Squares	df	Mean Square	F	P-value
Total Quality of Life (TQOL)	7354.45	1	7354.45	72.88	< 0.001
– (PHY)	1161.34	1	1161.34	93.08	< 0.001
– (PSY)	818.916	1	818.916	107.78	< 0.001
– (ACT)	1451.24	1	1451.24	57.06	< 0.001
– (SOC)	225.97	1	225.97	14.04	< 0.001
Depression	6426.47	1	6426.47	55.67	< 0.001

CHAPTER V DISCUSSIONS AND RECOMMENDATION

This chapter would show the conclusion and summarization of the finding, the discussion by clarifying the reason with the previous studies, and the recommendation of the research finding and guidance for further research. This study was a randomized controlled trial study with Pre-Post Test design that randomly selected sample by block of 2 randomization. The main purpose of this study is to evaluate the effects participatory selected music intervention model for improving the quality of life by using FACT-G questionnaire and decrease depression by using TGDS questionnaire. The study was conducted outpatient chemotherapy center of King Chulalongkorn Hospital. The samples were divided into the intervention and control groups at the cancer research in an outpatient (OPD case) chemotherapy unit, Chulalongkorn hospital with a new cancer patient cases who have been diagnosed with cancer of colon and rectum, lung, and breast cancer aged 55-75 years who were received chemotherapy. The total of 116 older adults were enrolled in the study both in intervention and control group (58 older adult each group).

During the time 2ndand 3rd evaluation 7 samples was dropped out for each the intervention, and 4 samples was dropped out for each control group, because their transfer to another hospital, change treatment (such as: operation, radiotherapy) and died. Therefore, there were 51 participants remaining in the time 4th evaluation for the intervention group and 54 participants remaining in the control group.

Outcome assessment was carried out at the time 1st, 2nd, 3rd and 4th after the intervention implemented. The measurements tool was FACT-G questionnaire and TGDS. Statistical analysis used were percentage, mean, median, independent t test, general linear model repeated measure ANOVA to evaluate the effects of the intervention.

5.1 DISSCUSSIONS OF THE FINDING

5.1.1 Baseline characteristics of participants

The age of participants was ranged from 55 to 83 years (62.5±5.7 in the intervention and 65.8±6.8 in the control group). This age range was found similar to cancer records in hospital in 2011 patients, to the number that has been hospitalized, a total of 3341 people, with age range 55 and over (cancer record in hospital, 2011). There was no difference in the characteristics between the intervention and control group in age, gender, marital status, educational level, occupational, and income. The results showed that the majority of them was married (80.4% in an intervention group and 96.6% in the control group). The marital status was found similar to the National Health Examination Survey NHES in 2009. NHES (National, et al., 2009) found that 79% of the male-aged and 45 % of the female-aged were married.

There were 51% males and 49% females in the intervention group, respectively 38.9% and 61.6% in the control group. This was similar to cancer records in hospital in 2011 patients with cancer, where 64.5% cancer patients were males and 52% were females (cancer record in hospital, 2011). With reference to the education level, most of the participants reported that they finished primary school (47.2% in the intervention group and 46.2% in the control group). The employment status of the elderly has shown that a high number in both groups was of unemployed status (23.5% in an intervention group and 27.8% in the control group). In the case of the elderly patients who were currently working, the most occupation among participants in the intervention group was in agriculture or having their own business, whereas trading occupation was the most in the control group. Income among the participants in the intervention group and the control group was not significantly different. The income in the intervention group was higher than in the control group. The average income in the intervention group was of Baht 15,921 ± 19,037 the income in the control group was of Baht (14,209 ± 11,033).

Health Status

In term of health status, among the nine (9) items including the history illness, history of alcohol drinking, history of smoking, regular drug used, allergic drug, type of cancer, systolic blood pressure (SBP/mmHg), diastolic blood pressure (DBP/mmHg) and pulse some characteristics between the intervention and control

group were statistically different including history of alcohol drinking, history of smoking, and diastolic blood pressure (DBP/mmHg).

More than 80 % of the participants in both groups (94.1% of the intervention group vs 85.2% of the control group) reported that they had at least one chronic disease. This was similar to the report of regular drug use with more than 80 % of the participants in both groups (88.2% in the intervention group vs 85.2% in the control group). Some of the patients had to take more than two medications for their diseases. This may affect their health status and their chemotherapy treatment, or is even the significant factor that can predict survival of life (Lichtman, 2004). It was also found that older people use three times more drugs to treat diseases than people at young age. They usually used four different types of drugs per person (Vestal, 1997).

Most of the participants reported that they had a history of smoking (66.7% in the intervention group and 88.9% in the control group). Most of the participants also reported that they had a history of drinking (66.7% in the intervention group and 87.0% in the control group). The results showed that the majority of them were on no allergic drug (92.2 % in an intervention group and 87.0 % in the control group).

In term of type of cancer there was not a big difference between the intervention and control group. The majority of the participants in both groups

(41.2% vs 42.6%) had colorectal cancer, lung cancer (21.6% intervention vs 31.5% control) and breast cancer (37.3% intervention vs 25.9% control). This was similar to cancers in Thailand, Vol VII, 2010-2012, the most common cancer in both gender was colon cancer, breast cancer, liver cancer, lung cancer and cervical cancer (Cancer in Thailand, Vol VII, 2010-2012).

The age, gender and type of cancer were similar to Cancer in Thailand (VOL VII, 2010-2012) that found that older patients in the age group of 55- 75 years suffered from the most common cancer ranked in first top three in men, including liver cancer, lung cancer and colon cancer. The top three of the most common cancers in women were breast cancer, colon cancer, and lung cancer, a trend observed in national and overall statistics. Cancer has been mostly found in the elderly people.

With reference to blood pressure (SBP/mmHg) and resting pulse (min) the diastolic blood pressure (DBP/mmHg) was different between two groups. The average systolic blood pressure (SBP/mmHg) among the intervention group was higher (141.35±19.6) compared to the control group (129.31±22.98). This result was similar to the average of the diastolic blood pressure (DBP/mmHg), with 87.96±12.87 in the intervention group and 75.98±13.40 in the control group. In term of the average of the resting pulse rate/ (min) the intervention group had a resting pulse rate of 80.27±9.95 which was lower than in the control group (86.30±15.62).

5.1.2 The Quality of Life (by using FACT-G questionnaire)

In term of quality of life using FACT-G self-assessment questionnaires, the quality of life at baseline was not different among the two groups. Quality of life using FACT-G instruments specifically developed for the geriatric population (Guyatt GH, et al, 1993), widely used instruments in elderly patients. For example, one of the most widely used QOL instruments, the Functional Assessment of Cancer Therapy General Scale (FACT-G), has been recently validated in elderly cancer patients (Overcash J, et al, 2001). FACT-G total score and sub scores were compared with the mixed aged cancer patients normative group of Cella et al. (1993). Authors' conclusions were that FACT-G proved to be a valid and reliable instrument, not biased by patients' age. Higher scores on the FACT-G questionnaire were reported by subjects with higher Eastern Cooperative Oncology Group Performance Status (PS) that is expression of the researcher assessment of the patient's conditions.

The mean score of the quality of life (total QOL) among the older adult participants in the intervention group was found at 71.63 (SD=6.86), and in the control group at 77.20 (SD=8.91) which both groups reported at the high level. Moreover, in the intervention group, the level was still at the same high level as at the 1st time of measurement, but the level in control group was different over the time of measurement.

5.1.3 Depression (by using TGDS questionnaire)

In term of depression using TGDS self-assessment questionnaires, the depression at baseline was found different among the two groups by statistical significance. The mean score of the depression among the older adult participants in the intervention group was found at 10.92 (SD=7.87), and in the control group at 19.56 (SD=1.38) that means that in the intervention group the level was found as normal level and in control group as mild level. The depression score among participants in the intervention group was most at the normal level but among participants in control group at moderate level. Thus n the control group, the depression was higher than the intervention group. There is evidence that about one-third of elderly cancer patients may experience psychological distress. Prevalence rates of clinically relevant levels of depression in elderly cancer patients have been estimated to be up to 25% (Kua J, 2005).

5.1.4 Effects of Music intervention (Listening) model on the Quality of Life (by using FACT-G questionnaire)

The average mean score of the quality of life at baseline was 71.63 in the intervention group and 71.20 in the control group. The statistic has shown no difference of the quality of life score at baseline between the intervention and control group. The quality of life was classified into 5 levels including very high QOL

(86.41-108), high QOL (64.81-86.40), moderate QOL (43.21-64.80), low QOL (21.61-43.20), and extremely low QOL (0-21.60) level. At 1st time, it was found that the majority of participants have had a high quality of life (84.3% and 68.5%).

General Linear Model repeated-measure ANOVA has shown that the overall effects of music intervention on the total quality of life and its 4 facets were significantly different. This finding is consistent with the study of Good et al. (2001) suggested that music can induce relaxation and distraction responses, which reduce activity in the neuroendocrine and sympathetic nervous systems, resulting in a decreased physiological state and enhanced emotional state. Although, QOL domains scores improved in the intervention group over time when patients got more music sessions.

By analyzing the four domains separately, it was evident that the ***Physical (PHY) well-being domain*** was statistically significantly different. The Phy domain increased after the intervention much more than the control group. This was a similar result to studies that have found that the use of music in cancer patients undergoing chemotherapy affect physical well-being. The music can help reduce pain from various causes, improves respiratory rate, relieves nausea and vomiting, increase the feeling of being more comfortable and muscle-relaxed (Aldridge, 2003; Bunt & Hoskyns, 2002; Burns, Harbuz, Hucklebridge, & Bunt, 2001; Hilliard, 2003; Kruse, 2003; Porchet-Munro, 1995; Rider, 1987; Standley, 1995). In addition, Olofsson

and Fossum (2009) found that listening to music prevents nausea and vomiting as a consequence of chemotherapy.

This is consistent with many studies which found that there were multiple physical well-being results regardless of the older adult's health conditions. Thautet al. (1995) found that older adults who participated in music enhance physical rehabilitation in older people suffering from strokes (Thautet al. 1995). Previous studies have shown that listening to music can increase physical functioning through increased motivation to exercise (Bernard 1992), such as distances walk (Becker et al. 1995). Gfeller (1988) found that the use of music could motivate repetitive exercise training, thereby improving physical functioning (Gfeller 1988).

Psychological (PSY) well-being domain, *refer to feel sad, satisfied with illness, losing hope with illness, nervous and worried about dying* also significantly improved for the better among the intervention group. Another study found that listening to music may reduce anxiety through suppressive action on the sympathetic nervous system (Gillen E, Biley F, Allen D, 2008). Moreover, music listening may activate imagery, offering a temporarily escape from the reality of cancer diagnosis and treatment. Importantly, music provides patients with an aesthetic experience that can offer comfort and peace during times of distress (Gillen E, Biley F, Allen D, 2008). Cochrane systematic review on the use of music interventions with cancer patients indicates that music interventions may have beneficial effects on anxiety,

pain, mood and quality of life (Bradt J, Dileo C, Grocke D, Magill L, 2011). Similar findings were reported in a study exploring adult cancer patients' use of music that offered comfort and peace during times of distress, lifting people's spirit and improving their sense of well-being (O'Callaghan C, et al, 2014). In addition, previous research demonstrating that the everyday use of music can be an important resource for enhancing one' s well-being and sense of empowerment (O'Callaghan C,et al, 2014). When the elderly recognized themselves that they had a cancer, they will feel lost in their life, scared, confused, dazed, and unconfident. These cause depression (Carbon and Cleary, 1998) in 20 percent of the elderly. In addition, from the feeling of being worthless and unvalued, there is a high risk of suicide. Psychological conditions directly affect the cancer patients in both, social life and activities, especially in older cancer patients (Weber and Navarro, 2005).

Activities (ACT) well-being domain, refer to *activities of daily living, able to work, enjoy life, sleeping well and satisfied with quality of life,* was significantly increased among the intervention group. The Butler and Butler (1997) study found that the benefit of music using frequencies was in stimulating resonant vibration in human muscle fiber and the nervous system. Thus, people can restore their daily role activities after improving their physical health. The side effects of chemotherapy made the patients to be more suffering. The daily routine that they usually do was diminished, and they were dependent on their family members (Balducci and

Extermann, 2000). This also made the patient to be sleepless, unhappy, and frustrated. The patients were desperate toward the disease and had a negative attitude towards the treatment (Kathleen et. al., 1997). The results from this study showed that after patients received the music intervention, their score in activities domain improved as well as the physiological domain. From the results, it can be concluded that if patients had improved in the physiological domain, this affected also positively the activities of their daily life.

Social well-being (SOC) domain refer to be *being able to have good personal relationships with friend or family.* The Soc was significantly lower in the control group than in the intervention group. This can be explained by the fact that the participants in the intervention group had better score of Soc than the control group without music intervention. For the effectiveness of the music listening, the participants had the opportunity to choose their song of preference. Moreover, to achieve effectiveness of music, researcher used headphones that reduced outside noise and offred the appropriated environment in order to allow patients to concentrate on the music, not having any interaction with other patients or their family. Due to the fact that cancer patients suffer from appearances problems such as hair loss and nails or skin discoloration, and sometimes have to use colostomy bags, this may lead to lack of confidence and separating them from the society. This restricts to socialize (Steele and Steele, 2006). In addition, the cancer patients were

globally affected by their economic situation (old age or family) because medical expenses for chemotherapy can be quite high. If a patient has no savings and no income this will result in a greater burden for the family (Matsuyan, Redd and Smith, 2006) and may have even other effects to family relationships. And the music therapy is unlikely to improve a patient's image or economic situation. In addition, the social well-being might be the domain that generally touches questions related to spiritual concerns of a patient's interaction with friends, family and society. The sample question was "I feel close to my friends, I get emotional support from my family, I get support from my friends, my family has accepted my illness, I am satisfied with family communication about my illness, I feel close to my partner (or the person. who is my main support), and I am satisfied with my sex life." From the literature review consulted from chemotherapy medical experts, these questions in this particular domain recommended that only listening to music cannot make a higher score in this domain. In this study, the length of listening to music was in the short period of time. Once the song finished, the patient was immediately evaluated. Therefore, we cannot assess correctly the improvement in the social well-being domain, risen by just only listening to music. This was consistent with the research of Hilliard RE. (2003) who studied the effects of music therapy on the quality and length of life with terminal cancer patients over age 65. The results show no difference in the social well-being domain between intervention and control groups. This domain including physical care, support from family and friends, physical contact with loved

ones, and satisfaction with the emotional and spiritual support provided by the hospice team, and therefore music therapy, would probably only have minimal effects.

However, this result doesn't support a previous study, Gerdner and Swanson (1993) that has shown that music can people, family and staff weld together. One research has shown that music can facilitate social integration for older, physically frail people (Palmer 1997), older people (Adams 1995), husbands with dementia and their spouses (Clair & Ebberts 1997). Bright (1997) suggested that music can be helpful in reorientation, rebuilding social links and raising morale. This was similar in another study showing that meaningful communication can be re-established between clients, family and staff (Kneafsey 1997).

The findings appear to show that the intervention was successful from the point of view of quality of life. Music intervention motivated older adults to increase frequency of physical, psychological, social activities. And the intervention may help older adult cancer patients to maintain lowered body functioning and effectively reduce symptoms of depression and improving QOL during chemotherapy. Furthermore the study found that older adult cancer patients on chemotherapy often experience anxiety, fear, stress, or sense of loneliness. Listening to recorded music while receiving this form of treatment can help take patients' minds away from the discomfort caused by the treatment and help them to cope with high

levels of stress, fear and loneliness. Listening to music can be used to create a mood of peace, relaxation, and last, but not least used to improve the level of comfort, express feelings and emotions.

5.1.5 Effects of Music intervention (Listening) model on the depression (by TGDS questionnaire)

The average mean score of the depression at baseline was 10.92 in the intervention group and 19.56 in the control group. The statistical difference of the depression score at baseline between the intervention and control group has been shown in the study. Depression was classified into 4 levels including normal depression (0-12), mild depression (13-18), moderate depression (19-24), and severe depression (25-30). At 1st time, it was found that the majority of participants had a normal depression level, 31.4% in the intervention group. In the control group a moderate depression level of 64.8% was found. In the study the results show that the depression scores in the music intervention group were significantly lower than those who received only routine care.

Similarly, Cooke et al. (2010) reported that music therapy, which was applied to older people for 40 minutes, three mornings a week for eight weeks, decreased depressive symptoms over time. Chan and colleagues (2012) also indicated that the music group had consistently reduced depression scores compared with the control

group during the eight-week study. In another study by Castillo-Perez et al. (2010) it was found that music therapy, which was performed for 50 min a day, every day, for eight weeks, reduced the depressive symptoms in patients with depression. On the other hand, in Guetin et al. (2009), patients with traumatic brain injury received 1-hour music therapy sessions weekly over a period of 20 weeks and the results showed that music therapy led to a significant reduction in depression from week 10 onwards and up until the end of the study. Similar findings were noted in other studies exploring the effect of music therapy in patients with major depression and dementia (Hsu & Lai, 2004; Raglio et al., 2010). Furthermore, previous studies have shown that music therapy can induce alpha waves in the brain causing relaxation and even can decrease depressive feelings (Bernatzky et al. 2011; Tjellesen, Yurkovich, & Gragert, 2001).

5.1.6 Music preference (Listening)

The intervention group participants, based on their willingness, had a 100% listening adherence to the music. This might be the result in this study music preference is appropriated for the older group. Another research in the field of music education found that there was evidence of a connection between participation in music and continued music participation as older adults. Older adults who participated actively in music were likely to have participated in music as a child or adolescent or during their schooling year (Wise, G.W., Hartmann, D. J., and Fisher, B.

J., 1992). For the type of music preference in the intervention group, Look Krung song was the highest ranked song that the elderly preferred to listen (67.24%) followed by Look Thung song (13.79%). For the music experience, 50.6% of the participants in the intervention group reported that they had some experience.

Among the elderly people who preferred to listen, QOL and depression were statistically significantly different in this study compared to elderly in the control group. This might be the effect of music intervention by using music of their preference, Look Krung song being the most preferred. This could explain that Look Krung or Thai popular music is similar to the rhythm of the resting heartbeat (60-80 beats per minute) which is the most preferred tempo close to the cycle of heartbeats (Iwanaga M, 1995). Previous studies had also supported this study, the fundamental frequency of the individual heart beat (72 beats/ min) affecting the total unity with the frequency of the body and the person's emotion and spirit (Iwanaga M, 1995, Brewer JF, 1998, Guzzetta CE, 1997, Andrew T, 1999 and Todaro-Franceschi V, 1999). Furthermore, Look Krung song is written in the form of a smooth poem explaining a sense of the community and the chronicle with emotional tone of the soft, delicate, and intricate lyrics and the nostalgic feeling (Amathayakul P, 1986). This reflects the phenomenon of the nostalgic moment from the music experience that could be the flashbacks and the sensibilities of familiar atmosphere. Nostalgia is a way of looking at the world or how to give meaning to the life of one human being

by emphasizing the importance of imagination and emotion becoming the part of the cultural life of the individual and the society in general Pattana (Kittiarsa P, 2003).

Look Krung song can create the memorial moment for the elderly people with experiences over time. This relationship is formed by the aesthetic experience and phenomenon of life along with Look Krung music at the period of time which could coincide with the individual memory and collective memory for the events during that time either positive or negative memories; however, they can create emotional experiences of a person. In the elderly, the popular music song was found to be the representative of the various memories that could be sadness, happiness, and love (Huei-Chuan S, Anne, M. C. and Wen-Li, L, 2010). This recalled them from their memorial events because of its nature of accessible and simple communication with the connections of music to life experience that can cause a feeling and mood to listen to selected music for inducing the happiness and satisfaction (Krangsaard S, 2012).

The participatory selected music intervention model could induce positive effects in increasing the quality of life. Use of music based on the preferences of those patients may also improve the effects of music intervention on their QOL and depression. Research using preferred music has demonstrated the effectively positive influence on the intervention (Gerdner, 2000; Thomas, 1997 and Ragneskog et al., 2001). Familiar music can impact more positive responses than unfamiliar music.

In this study, using the participants' familiar music as their preference (such as Thai folk songs and Thai classic song), found that participants had more grateful responses during the intervention. Familiar of preferred music from early adult years can also facilitate their emotional and physical responses (Wylie, 1990). Additionally, in our findings, the previous studies also supported that music intervention can furthermore have a positive effect to patients with other type of the treatment. Music has been shown as an adjunct to treatment, and specific elements of music have been linked to significantly higher rates of positive emotion (O'Connor, 1993 and Salimpoor, 1997). For example, music therapy improves executive functioning and eases the adjustment to rehabilitation in patients with traumatic brain injury (Thaut, Gardiner and, Holmberg, 2009 and Hegde, 2014). Moreover, the previous study have found that music listening significantly enhanced in verbal memory and positive emotion in patients after middle cerebral artery stroke compared with control participants (Sarkamo, Tervaniemi and Laitinen 2008). Another study with a randomized controlled trial design conducted in Hong Kong with the total of 66 older people (31 in music group and 35 in control group) were randomly assigned to undergo either a 30-minute music intervention or a rest period for 4 weeks. By using Mp3 player it was found that quality of life improved weekly in the music group, and statistically significantly better over time in each sub-score for those in the music group compared with the control group (Lee, Chan and Mok, 2010). Moreover, the

literature review suggests that listening to music for 15-30 min is sufficient for therapeutic application (Arslan, 2007).

5.2 CONCLUSIONS

The main purpose of this study was to evaluate the effectiveness of participatory selected music intervention model on the quality of life and depression among older adult cancer patient by using the music therapy activities and music preference as well as to create activity and participation for the older adult cancer patient undergoing chemotherapy. The activities in the hospital tended to help the older adults to improve to promote well-being. Moreover, music activity comes to our life in a meaningful way. The present study has clearly shown the effectiveness of an intervention based on music activity in the form of listening and following a music intervention model.

An activity that was very various in improving quality of life and decreasing depression. The outcome of this study has shown that depression can be overcome and quality of life can be increased. Use of music intervention in the form of activity is one form of non-pharmacological approaches and has several advantages in addressing the psycho-social, physical as well as environmental aspects. Consequently, music intervention that concentrates on the selection of appropriate type of music for the older adult's preference is a must to be considered for creating a cost-effective and successful intervention in the form of music activities for

improving the quality of life in older adult cancer patients. This music intervention model may show the way for a better understanding and treatment, and last, but not least, for a better acceptance. An alternative way for a natural treatment without medication, to restore mood, joy and quality of life. The results of this study may vouch for the health benefits of a medically approved music therapy regimen. The beauty of music therapy is that it helps people in a physical, mental, emotional and perhaps also in a social way. Music therapy, without doubt, can help people to create a more relaxed and happy life.

5.3 LIMITATIONS OF THE STUDY

1. For older adults with cancer, this study has a high impact, as for this age group such an intervention is not easy. The facilities used for this research were relatively limited, and the number of patients treated per day was very high, about 80-100 people. This affected the number of beds for the volume of patients who received chemotherapy. The effectiveness of listening music intervention performance might be reduced due to the interference from other patients. In addition, the noise of a nearby construction site may have particularly disturbed an optimal approach to music.

2. In this research, the patients used headphones to listen to the music. The reason of using headphones was to reduce the noise from the environment in order to increase the effectiveness and quality of listening to the music. However,

some patients did not want to use such tools because they felt uncomfortable. During the chemotherapy treatment, due to side effects, the patient had to go to the bathroom quite often. Moreover, due to the process of chemotherapy treatment, the medical stuff such as nurses and pharmacists had to convene the patients for the side effects and measuring their blood pressure. These resulted partially in the interruption of listening to the music.

3. According to the fact that this study was conducted only on a single chemotherapy outpatient unit at King Chulalongkorn hospital, this has influenced the selection of the samples for the study.

4. The time spent of listening to music among the older adult participants was short and the length of time was depending on the time of treatment.

5. Time was limited, the study included two interventions. It is probably not enough to assess the sustainability of the outcome with ultimate certainty.

6. In terms of depression, this study showed that patients had the depression score at the normal level in the intervention group and mild level in the control group. This is very mild conditions. Therefore, the researchers did not consult psychiatrist for the depression of the patients.

7. TGDS questionnaire used in this research was appropriated for the elderly in terms of language and understanding. Patients can answer questions by themselves. The researcher does not have to explain. However, because of the research design in this study was pre-test and post-test design, and it was measured before and after chemotherapy immediately, which was a short time. As a result, this survey may not be appropriate for this research.

5.4 RECOMMENDATIONS

1. For all cancer patients a choice of preference for their desire type of music intervention should be offered, depending upon their background, musical experience and budget.

2.The intervention should encourage to be organized in all hospitals including clinics, public or private hospitals and furthermore promoted among their patients as a home-based program of music therapy that may have long-lasting effects.

3.For further studies in older adults with cancer, the type of cancer should be only one specific type of cancer to guarantee that the study analyzed and the results are specific to the type.

4.The elderly cancer patients should be financially and socially supported to reduce stress. Since the elderly are treated with chemotherapy, the

costs of drugs are very high, and they will frequently need hospitalization for blood testing. The costs of treatment increases continuously. These will strongly contribute to economic stress, will reduce the effect of the chemotherapy or even create other health problems.

5.In order to enhance the effectiveness of the intervention, the MP3, headphones and earphones should be high quality equipment of good quality to guarantee the best possible listening effect.

6. As the time spent of listening music among the older adult patients was quite short, and the length of time limited to time of treatment. Further researchers should give the patients the possibility to listen to the music at home.

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APPENDIX

รหัสผู้ป่วย.....

สถานที่.....

วันที่..../.../...

แบบสัมภาษณ์ข้อมูลทั่วไป แบบบันทึกข้อมูลการเจ็บป่วย แบบสำรวจความชอบในรูปแบบของดนตรีเพื่อสร้างโปรแกรมดนตรีแบบฟัง (Music Listening Program) แบบวัดคุณภาพชีวิตของผู้ป่วยมะเร็งทั่วไป (FACT-G : Thai version) แบบสัมภาษณ์ภาวะซึมเศร้าในผู้สูงอายุไทย(Thai Geriatric Depression Scale, TGDS)

คำชี้แจง

แบบสำรวจ แบบสอบถามและแบบสัมภาษณ์นี้เป็นส่วนหนึ่งของการวิจัย การใช้กิจกรรมดนตรีเพื่อพัฒนาคุณภาพชีวิตของผู้ป่วยมะเร็งสูงอายุขณะได้รับการรักษาด้วยเคมีบำบัด ที่หน่วยเคมีบำบัด โรงพยาบาลจุฬาลงกรณ์ สภากาชาดไทย

วัตถุประสงค์เพื่อสำรวจดนตรีที่มีความเหมาะสมกับความต้องการของผู้ป่วยสูงอายุที่เป็นมะเร็ง ศึกษาคุณภาพชีวิตและความวิตกกังวลในผู้ป่วยสูงอายุ โดยการนำเอาดนตรีมาใช้ในการบำบัดรักษาร่วมกับการรักษาด้วยเคมีบำบัด

อนึ่งการตอบแบบคำถามครั้งนี้เป็นการให้ข้อมูลตามความสมัครใจของผู้ตอบ และผู้วิจัยจะไม่เปิดเผยชื่อผู้ให้ข้อมูล จะเก็บไว้เป็นความลับสำหรับการทำวิจัยเท่านั้น และไม่มีผลกระทบใดๆ ต่อผู้ตอบแบบสอบถามและครอบครัวทั้งสิ้น ใช้เวลาในการตอบแบบสอบถามประมาณ 20 นาที แบบสำรวจมีทั้งหมด 2 ส่วน ประกอบด้วย

ส่วนที่ 1 ข้อมูลทั่วไป จำนวน 12 ข้อ

ส่วนที่ 2 แบบบันทึกข้อมูลการเจ็บป่วย(บันทึกโดยผู้วิจัย) จำนวน 3 ข้อ

ส่วนที่ 3 แบบสำรวจความชอบในรูปแบบของดนตรีเพื่อสร้างโปรแกรมดนตรีแบบฟัง จำนวน 13 ข้อ

ส่วนที่ 4 แบบวัดคุณภาพชีวิตสำหรับผู้ป่วยมะเร็งทั่วไป (FACT-G : Thai version) จำนวน 27 ข้อ

ส่วนที่ 5 แบบสัมภาษณ์ภาวะซึมเศร้าในผู้สูงอายุไทย(Thai Geriatric Depression Scale, TGDS) จำนวน 30 ข้อ

ส่วนที่ ข้อมูลทั่วไป 1

คำชี้แจง ในการตอบแบบสอบถามนี้ ต้องการทราบข้อมูลส่วนตัวและข้อมูลเกี่ยวกับความเจ็บป่วยของท่านโปรดเติมข้อความในช่องว่าง และ/หรือขีดเครื่องหมาย / ในวงเล็บ ( ) หน้าข้อความที่ตรงตามความจริง โดยแต่ละข้อขอให้ท่านเลือกตอบเพียงคำตอบเดียว และโปรดตอบคำถามทุกข้อ

1. เพศ ( ) ชาย ( ) หญิง
2. อายุ.....ปี
3. ท่านมีโรคประจำตัว(ที่วินิจฉัยโดยแพทย์) หรือไม่
   ( ) ไม่มี ( ) มี โปรดระบุ.....
4. สูบบุหรี่ ( ) ไม่สูบ ( ) สูบ วันละ.....เป็นเวลา.....ปี
   ปริมาณมวนต่อวัน ..... หยุดสูบมานาน.....ปี
5. ดื่มสุรา ( ) ไม่ดื่ม( ) ดื่ม วันละ.....เป็นเวลา.....ปี
   ปริมาณต่อวัน..... หยุดดื่มมานาน.....ปี
6. ยาที่ใช้เป็นประจำ ( ) ไม่มี ( ) มี ระบุ.....
7. ประวัติการแพ้ยา ( ) ไม่มี
   ( ) มี ยาที่แพ้.....อาการที่แพ้.....
8. สถานภาพสมรส ( ) สมรส ( ) โสด ( ) ม่าย/หย่าร้าง/แยกกันอยู่
9. ระดับการศึกษาชั้นสูงสุด
   ( ) ไม่ได้รับการศึกษา ( ) ประถมศึกษา ( ) มัธยมศึกษา
   ( ) ประกาศนียบัตรวิชาชีพขั้นสูง/อนุปริญญา ( ) ปริญญาตรี/เทียบเท่า
   ( ) ปริญญาโท ( ) อื่นๆ (ระบุ) .....
10. อาชีพ
    ( ) ไม่ได้ประกอบอาชีพ ( ) ข้าราชการเกษียร ( ) ค้าขาย
    ( ) เกษตรกร ( ) รับจ้าง ( ) ธุรกิจส่วนตัว/เจ้าของธุรกิจ ( ) อื่นๆ ระบุ.....
11. รายได้เฉลี่ยต่อเดือนในปัจจุบัน .....บาท
12. สิทธิการรักษาพยาบาล
    ( ) บัตรข้าราชการกรมบัญชีกลาง/ ( ) บัตรประกันสุขภาพถ้วนหน้า
    ( ) ประกันสังคมรพจุฬาลงกรณ์ . ( ) ประกันสังคมรพอื่น .
    ( ) ครอบครัวจนทรรพ.จุฬาลงกรณ์. ( ) รัฐวิสาหกิจ
    ( ) กรุงเทพมหานครข้าราชการปกครองท้องถิ่น/( ) จ่ายเอง
    ( ) อื่นๆ ระบุ.....

ส่วนที่ 2 แบบบันทึกข้อมูลการเจ็บป่วย(บันทึกโดยผู้วิจัย)

1. การตรวจร่างกาย
   น้ำหนัก.กก.....
   ความดันโลหิตมม.ปรอม..... ชีพจรครั้ง/นาที.....
2. อาการเจ็บป่วยในปัจจุบัน(Present Illness).....
3. การวินิจฉัยโรค (Primary organ).....
   ( ) มะเร็งลำใส้ใหญ่และทวารหนัก ( ) มะเร็งปอด ( ) มะเร็งเต้านม

ส่วนที่ 3 แบบสำรวจความชอบในรูปแบบของดนตรีเพื่อสร้างโปรแกรมดนตรีแบบฟัง

คำชี้แจง ในการตอบแบบสอบถามนี้ ต้องการทราบสำรวจเพลงที่ท่านชอบและต้องการฟัง โปรดเติมข้อความในช่องว่าง และ/หรือขีดเครื่องหมาย / ในวงเล็บ ( ) หน้าข้อความที่ตรงตามความต้องการของท่าน

ประเภทเพลง	ความชอบในการฟังเพลง		
	มาก	ปานกลาง	น้อย
ท่านต้องการฟังเพลงต่อไปนี้ในขณะรักษาด้วยเคมีบำบัด 1. เพลงลูกกรุง ( ) ระบุชื่อศิลปิน..... ( ) ชื่อเพลง..... ( ) ไม่ระบุ..... 2. เพลงลูกทุ่ง ( ) ระบุชื่อศิลปิน..... ( ) ชื่อเพลง..... ( ) ไม่ระบุ..... 3. เพลงไทยเดิม ( ) ระบุชื่อศิลปิน..... ( ) ชื่อเพลง..... ( ) ไม่ระบุ..... 4. เพลงพื้นเมือง ( ) ระบุชื่อศิลปิน..... ( ) ชื่อเพลง..... ( ) ไม่ระบุ..... 5. เพลงสตริง ( ) ระบุชื่อศิลปิน.....			

ประเภทเพลง	ความชอบในการฟังเพลง		
	มาก	ปานกลาง	น้อย
( ) ชื่อเพลง..... ( ) ไม่ระบุ..... 6. เพลงคลาสสิก ( ) ระบุชื่อศิลปิน..... ( ) ชื่อเพลง..... ( ) ไม่ระบุ..... 7. เพลงจีน ( ) ระบุชื่อศิลปิน..... ( ) ชื่อเพลง..... ( ) ไม่ระบุ..... 8. เพลงสากล ( ) ระบุชื่อศิลปิน..... ( ) ชื่อเพลง..... ( ) ไม่ระบุ..... 9. เพลงสากลที่ไม่มีเนื้อร้อง ( )ระบุชื่อศิลปิน. ( ) ชื่อเพลง..... ( ) ไม่ระบุ..... 10. เพลงไทยที่ไม่มีเนื้อร้อง ( ) ระบุชื่อศิลปิน..... ( ) ชื่อเพลง..... ( ) ไม่ระบุ..... เพลงอื่นๆโปรดระบุ.....			

11. ท่านมีพื้นฐานดนตรีหรือไม่ เช่น ท่านเล่นดนตรี/หรือร้องเพลงได้หรือไม่

☐ มี ☐ ไม่มี ( ) อื่นๆ ระบุ.....

12. เหตุผลที่ท่านชอบฟังดนตรี/เพลง (ตอบได้มากกว่า 1 ข้อ(

☐ 1. ผ่อนคลายความเครียด ☐ 2. มีเวลาว่าง

☐ 3. ชอบ ☐ 4. อื่นๆ.....

13. เสียงดนตรีทำให้ท่านมีความสุข

☐ 1. เห็นด้วย ☐2 . ไม่เห็นด้วย ☐3 . อื่นๆ...

ส่วนที่ 4 แบบวัดคุณภาพชีวิตสำหรับผู้ป่วยมะเร็งทั่วไป (FACT-G : Thai version)

คำชี้แจง ในการตอบแบบสอบถามนี้ ต้องการทราบว่า ท่านมีคุณภาพชีวิตขณะได้รับการรักษาด้วยเคมีบำบัด ตามการรับรู้ของท่าน ในด้านความผาสุกด้านร่างกาย ความผาสุกด้านสังคม/ครอบครัว ความผาสุกด้านอารมณ์/จิตใจ และความผาสุกด้านการปฏิบัติกิจกรรม ประกอบด้วยข้อคำถาม 27 ข้อ โดยมีเกณฑ์ดังนี้

มาก หมายถึงมีความรู้สึกว่าคุณภาพชีวิตในด้านนั้นมีมาก

ค่อนข้างมาก หมายถึงมีความรู้สึกว่าคุณภาพชีวิตในด้านนั้นมีค่อนข้างมาก

ปานกลาง หมายถึงมีความรู้สึกว่าคุณภาพชีวิตในด้านนั้นมีปานกลาง

น้อย หมายถึงมีความรู้สึกว่าคุณภาพชีวิตในด้านนั้นมีน้อย

น้อยที่สุด หมายถึงมีความรู้สึกว่าคุณภาพชีวิตในด้านนั้นมีน้อยที่สุด

โปรดตอบทุกคำถามตามความเป็นจริงโดยกาเครื่องหมาย / ลงในช่องหลังข้อความที่ตรงกับความรู้สึกของท่านมากที่สุด

ข้อคำถาม	มาก	ค่อนข้างมาก	ปานกลาง	น้อย	น้อยที่สุด
ความผาสุกด้านร่างกาย					
1. ฉันรู้สึกว่าตนเองหมดเรี่ยวแรง -					
2. ฉันรู้สึกว่ามีอาการคลื่นไส้-					
3. ฉันรู้สึกว่าสภาพร่างกายทำให้มีปัญหาในการรับภาระต่างๆในครอบครัว-					
4. ฉันรู้สึกว่ามีอาการปวด-					
5. ฉันรู้สึกว่ารำคาญต่ออาการข้างเคียงที่เกิดจากการรักษา-					
6. ฉันรู้สึกว่าตนเองไม่สบาย-					
7. ฉันต้องใช้เวลาส่วนใหญ่อยู่บนเตียง-					
ความผาสุกด้านสังคม/ครอบครัว					
8. ฉันรู้สึกใกล้ชิดสนิทสนมกับเพื่อนๆ+ 9. ฉันรู้สึกถึงกำลังใจที่ได้รับจากคนในครอบครัว+					
10. ฉันรู้สึกได้รับการดูแลช่วยเหลือจากเพื่อนๆ+					
11. ครอบครัวของฉันให้การยอมรับในความ					

ข้อคำถาม	มาก	ค่อนข้างมาก	ปานกลาง	น้อย	น้อยที่สุด
เจ็บป่วยของฉัน+					
12. ฉันรู้สึกพึงพอใจต่อการสื่อสารกันภายในครอบครัว+					
13. ฉันรู้สึกใกล้ชิดกับคู่ครอง/คนสำคัญที่คอยให้กำลังใจ+					
14. ฉันรู้สึกพึงพอใจกับชีวิตทางเพศของตนเอง+					
ความผาสุกด้านอารมณ์/จิตใจ					
15. ฉันรู้สึกเศร้าใจ-					
16. ฉันรู้สึกพอใจกับวิธีการปรับตัวต่อการเจ็บป่วยของตนเอง+					
17. ฉันรู้สึกหมดหวังในการต่อสู้กับความเจ็บป่วย-					
18. ฉันรู้สึกกระวนกระวายใจ-					
19. ฉันรู้สึกวิตกกังวลเกี่ยวกับความตาย-					
20. ฉันรู้สึกวิตกกังวลว่าอาการจะแย่ลง-					
ความผาสุกด้านการปฏิบัติกิจกรรม					
21. ฉันสามารถทำงานทั่วไปได้ (รวมถึงงานบ้าน)+					
22. ฉันรู้สึกพึงพอใจในผลสำเร็จของงาน+					
23. ฉันรู้สึกถึงการมีชีวิตที่สนุกสนาน+					
24. ฉันยอมรับความเจ็บป่วยที่เป็นอยู่+					
25. ฉันมีคุณภาพการนอนหลับที่ดี+					
26. ฉันรู้สึกสนุกสนานกับสิ่งที่เคยทำเพื่อความสำราญ+					
27.ฉันรู้สึกพึงพอใจในคุณภาพชีวิตของตนในขณะเจ็บป่วย+					

ส่วนที่ 5 แบบสัมภาษณ์ภาวะซึมเศร้าในผู้สูงอายุไทย(Thai Geriatric Depression Scale, TGDS)

คำชี้แจง ในการตอบแบบสอบถามนี้ ต้องการทราบว่าท่านมีความรู้สึกในช่วงเวลาหนึ่งสัปดาห์ที่ผ่านมาเป็นอย่างไร ประกอบด้วยข้อคำถาม 30 ข้อ โดยมีเกณฑ์ดังนี้

คะแนน 0-12 คะแนน แสดงว่า ผู้สูงอายุปกติไม่มีภาวะซึมเศร้า

คะแนน 13-18 คะแนน แสดงว่า ผู้สูงอายุมีภาวะซึมเศร้าเล็กน้อย

คะแนน 19-24 คะแนน แสดงว่า ผู้สูงอายุมีภาวะซึมเศร้าปานกลาง

คะแนน 25-30 คะแนน แสดงว่า ผู้สูงอายุอายุมีภาวะซึมเศร้าสูง

หมายเหตุ การคิดคะแนน ข้อ ถ้าตอบว่า 1,5,7,9,15,19,21,27,29,30 “ไม่ใช่” ได้ คะแนนข้อที่ 1 เหลือถ้าตอบว่า “ใช่” ได้ คะแนน 1

ลำดับ	ในช่วง 1 สัปดาห์ที่ผ่านมา	ใช่	ไม่ใช่	คะแนน
1.	ท่านพอใจกับชีวิตความเป็นอยู่ตอนนี้			
2.	ท่านไม่อยากทำในสิ่งที่เคยสนใจหรือเคยทำเป็นประจำ			
3.	ท่านรู้สึกชีวิตของท่านช่วงนี้ว่างเปล่าไม้รู้จะทำอะไร			
4.	ท่านรู้สึกเบื่อหน่ายบ่อยๆ			
5.	ท่านหวังว่าจะมีสิ่งที่ดีเกิดขึ้นในวันหน้า			
6.	ท่านมีเรื่องกังวลตลอดเวลา และเลิกคิดไม่ได้			
7.	ส่วนใหญ่แล้วท่านรู้สึกอารมณ์ดี			
8.	ท่านรู้สึกกลัวว่าจะมีเรื่องไม่ดีเกิดขึ้นกับท่าน			
9.	ส่วนใหญ่ท่านรู้สึกมีความสุข			
10.	บ่อยครั้งที่ท่านรู้สึกไม่มีที่พึ่ง			
11.	ท่านรู้สึกกระวนกระวาย กระสับการส่ายบ่อยๆ			
12.	ท่านชอบอยู่กับบ้านมากกว่าที่จะออกนอกบ้าน			
13.	บ่อยครั้งที่ท่านรู้สึกวิตกกังวลเกี่ยวกับชีวิตข้างหน้า			
14.	ท่านคิดว่าความจำท่านไม่ดีเท่ากับคนอื่น			
15.	การที่มีชีวิตอยู่ถึงปัจจุบันนี้เป็นเรื่องที่น่ายินดีหรือไม่			
16.	ท่านรู้สึกหมดกำลังใจหรือเสร้าใจบ่อยๆ			
17.	ท่านรู้สึกว่าชีวิตท่านค่อนข้างไม่มีคุณค่า			
18.	ท่านรู้สึกกังวลมากกับชีวิตที่ผ่านมา			

ลำดับ	ในช่วง 1 สัปดาห์ที่ผ่านมา	ใช่	ไม่ใช่	คะแนน
19.	ท่านรู้สึกว่าชีวิตนี้มีเรื่องน่าสนุกอีกมาก			
20.	ท่านรู้สึกลำบากที่จะเริ่มต้นทำอะไรใหม่			
21.	ท่านรู้สึกกระตือรือร้น			
22.	ท่านรู้สึกสิ้นหวัง			
23.	ท่านคิดว่าคนอื่นดีกว่าท่าน			
24.	ท่านอารมณ์เสียง่ายกับเรื่องเล็กๆน้อยๆ อยู่เสมอ			
25.	ท่านรู้สึกอยากร้องไห้บ่อยๆ			
26.	ท่านมีความตั้งใจทำสิ่งใดสิ่งหนึ่งได้ไม่นาน			
27.	ท่านรู้สึกสดชื่นในเวลาตื่นนอนตอนเช้า			
28.	ท่านไม่อยากพบปะพูดคุยกับคนอื่น			
29.	ท่านตัดสินใจอะไรได้เร็ว			
30.	ท่านมีจิตใจสบายแจ่มใสเหมือนก่อน			
	รวม			

VITA

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