Effect of peer support intervention on anxiety, depression and quality of life among female breast cancer patients on chemotherapy in Yangon, Myanmar: randomized controlled trial

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A Dissertation Submitted in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy in Public Health
Common Course
COLLEGE OF PUBLIC HEALTH SCIENCES
Chulalongkorn University
Academic Year 2019

ผลของโครงการเพื่อนช่วยเพื่อนต่อภาวะวิตกกังวลภาวะซึมเศร้าและคุณภาพชีวิตของผู้ป่วยมะเร็งเต้านมเพศหญิงขณะได้รับเคมีบำบัดในเมืองย่างกุ้ง ประเทศเมียนมา: การทดลองแบบสุ่มโดยมีกลุ่มควบคุม

นายมิน ทู นอง

วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาสาธารณสุขศาสตรดุษฎีบัณฑิต
สาขาวิชาสาธารณสุขศาสตร์ ไม่สังกัดภาควิชา/เทียบเท่า
วิทยาลัยวิทยาศาสตร์สาธารณสุข จุฬาลงกรณ์มหาวิทยาลัย
ปีการศึกษา 2562

Thesis Title	Effect of peer support intervention on anxiety, depression and quality of life among female breast cancer patients on chemotherapy in Yangon, Myanmar: randomized controlled trial
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Field of Study	Public Health
Thesis Advisor	Alessio Panza, M.D.

Accepted by the COLLEGE OF PUBLIC HEALTH SCIENCES, Chulalongkorn University in Partial Fulfillment of the Requirement for the Doctor of Philosophy

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มิน ทู นอง : ผลของโครงการเพื่อนช่วยเพื่อนต่อภาวะวิตกกังวลภาวะซึมเศร้าและคุณภาพชีวิตของผู้ป่วยมะเร็งเต้านมเพศหญิงขณะได้รับเคมีบำบัดในเมืองย่างกุ้ง ประเทศเมียนมา: การทดลองแบบสุ่มโดยมีกลุ่มควบคุม. (Effect of peer support intervention on anxiety, depression and quality of life among female breast cancer patients on chemotherapy in Yangon, Myanmar: randomized controlled trial) **อ.ที่ปรึกษาหลัก : อเลซซิโอ พันซ่า**

ที่มาของงานวิจัย: อาการทางกายและทางจิตที่เกิดขึ้นหลังจากการวินิจฉัยและระหว่างการทำเคมีบำบัดส่งผลกระทบเชิงลบต่อคุณภาพชีวิตของผู้ป่วยมะเร็งเต้านม นอกจากนี้ความวิตกกังวลและภาวะซึมเศร้ายังเชื่อมโยงกับคุณภาพชีวิตที่แย่ลงและการวินิจฉัยโรค การศึกษาในครั้งนี้ผลของโครงการเพื่อนช่วยเพื่อนต่อความรู้เกี่ยวกับเคมีบำบัด การเชื่อมั่นในศักยภาพของตนเอง ความเห็นใจ ความพึงพอใจของผู้บริโภค ความวิตกกังวล ภาวะซึมเศร้าและคุณภาพชีวิตของผู้ป่วยมะเร็งเต้านมเพศหญิงขณะได้รับเคมีบำบัดในเมืองย่างกุ้ง ประเทศเมียนมา

วิธีการวิจัย: การศึกษาในครั้งนี้ดำเนินการทดลองแบบสุ่มโดยมีกลุ่มควบคุม ณ คลินิกมูลนิธิมะเร็ง Shwe Yaung Hnin Si ในเมืองย่างกุ้ง โดยมีผู้ป่วยเข้าร่วมทั้งหมด 74 คนและได้รับการจัดเข้ากลุ่มแทรกแซงและกลุ่มควบคุมด้วยวิธีแบบสุ่ม กลุ่มแทรกแซงได้รับการช่วยเหลือจากโครงการเพื่อนช่วยเพื่อน ได้แก่ การให้คำปรึกษารายบุคคล การประชุมกลุ่ม การให้คำปรึกษาทางโทรศัพท์ และโปรแกรมการให้ความรู้ระหว่างการทำเคมีบำบัด โดยมีการเก็บข้อมูลโดยใช้แบบสอบถามด้วยการสัมภาษณ์ สามครั้ง คือ ข้อมูลพื้นฐาน ข้อมูลหลังการทดลอง และข้อมูลหลังจากการติดตาม 2 เดือน ข้อมูลที่ได้ถูกวิเคราะห์ทางสถิติโดยการทดสอบ Independent t-test chi-square test analysis of covariance (ANCOVA) test Quade's test for non-parametric ANCOVA Mann-Whitney U test Wilcoxon signed-rank test และ linear mixed models ด้วย random intercepts

ผลการศึกษา: ข้อมูลพื้นฐานเกี่ยวกับลักษณะทางสังคมและประชากร ประวัติทางการแพทย์ ความรู้เกี่ยวกับเคมีบำบัด การเชื่อมั่นในศักยภาพของตนเอง ความเห็นใจ ความวิตกกังวล ภาวะซึมเศร้า และคุณภาพชีวิต (global health status) รวมถึง คะแนน functioning และ symptoms ในแบบสอบถามคุณภาพชีวิต ไม่มีความแตกต่างอย่างมีนัยสำคัญทางสถิติระหว่างกลุ่มแทรกแซงและกลุ่มควบคุม ยกเว้นคะแนน role functioning ($p = 0.019$) หลังการทดลองกลุ่มแทรกแซงมีคะแนนเฉลี่ยสูงกว่ากลุ่มควบคุมอย่างมีนัยสำคัญ ในด้านความรู้เกี่ยวกับเคมีบำบัด ($p <0.001$) การเชื่อมั่นในศักยภาพของตนเอง ($p <0.001$) ความเห็นใจ ($p <0.001$) คุณภาพชีวิต (global health status) ($p = 0.017$) และ functioning ด้านต่างๆ ได้แก่ ร่างกาย ($p<0.001$) บทบาทหน้าที่ ($p<0.001$) ทางด้านอารมณ์ ($p<0.001$) สติปัญญา ($p=0.002$) สังคม ($p=0.002$) จินตนภาพเกี่ยวกับร่างกายตรเอง ($p=0.032$) และ มุมมองในอนาคต ($p=0.002$) นอกจากนี้กลุ่มแทรกแซงมีคะแนนเฉลี่ยน้อยกว่ากลุ่มควบคุมอย่างมีนัยสำคัญ ได้แก่ ความวิตกกังวล ($p = 0.013$) ภาวะซึมเศร้า ($p <0.001$) อ่อนเพลีย ($p = 0.009$) และคลื่นไส้และอาเจียน ($p = 0.022$)ข้อมูลติดตามหลังจากการติดตาม 2 เดือน พบว่ากลุ่มแทรกแซงมีอัตราการเพิ่มขึ้นของการทำงานทางอารมณ์อย่างมีนัยสำคัญ ($p = 0.017$) และมุมมองในอนาคต ($p = 0.030$) เมื่อเปรียบเทียบกับกลุ่มควบคุม นอกจากนี้กลุ่มแทรกแซงมีอัตราการลดลงอย่างมีนัยสำคัญทางด้าน ความวิตกกังวล ($p = 0.009$) ความซึมเศร้า ($p = 0.002$) อาการที่มาจากเต้านมเป็นสาเหตุ ($p = 0.014$) และการนอนไม่หลับ ($p = 0.016$) เมื่อเทียบกับกลุ่มควบคุม

สรุป: โครงการเพื่อนช่วยเพื่อนมีประสิทธิผลในการเพิ่มความรู้เกี่ยวกับเคมีบำบัด การเชื่อมั่นในศักยภาพของตนเอง ความเห็นใจ และลดความวิตกกังวลและภาวะซึมเศร้าของผู้เข้าร่วมทันทีหลังจากการทดลอง ทั้งนี้โครงการเพื่อนช่วยเพื่อนยังมีประสิทธิภาพในการเพิ่มคุณภาพชีวิต (global health status) functioning ด้านต่างๆ ทั้งทางร่างกาย บทบาทหน้าที่ ทางอารมณ์ ทางสติปัญญา ทางสังคม จิตนภาพร่างกายและมุมมองในอนาคตของผู้เข้าร่วม นอกจากนี้ยังมีประสิทธิภาพในการลดความเหนื่อยล้าและอาการคลื่นไส้อาเจียนของผู้เข้าร่วมทันทีหลังจากการทดลอง โครงการเพื่อนช่วยเพื่อมียังแสดงถึงประสิทธิภาพที่ต่อเนื่องสองเดือนหลังจากจบการทดลองทางด้านการพัฒนาอารมณ์และมุมมองในอนาคต และลดความวิตกกังวล ซึมเศร้า การนอนไม่หลับและอาการที่เกี่ยวกับเต้านม ดังนั้นโปรแกรมและกิจกรรมในโครงการเพื่อนช่วยเพื่อนของการศึกษาในครั้งนี้จึงเหมาะที่จะเป็นโครงการต้นแบบสำหรับผู้ป่วยมะเร็งเต้านมในอนาคต

สาขาวิชา	**สาธารณสุขศาสตร์**	**ลายมือชื่อนิสิต** .....
ปีการศึกษา	2562	**ลายมือชื่อ อ.ที่ปรึกษาหลัก** .....

5979170353 : MAJOR PUBLIC HEALTH

KEYWORD: Breast Cancer, Chemotherapy, Knowledge, Self-efficacy, Empathy, Consumer Satisfaction, Anxiety, Depression, Quality of Life, Peer Support Intervention, Myanmar

Min Thu Naung : Effect of peer support intervention on anxiety, depression and quality of life among female breast cancer patients on chemotherapy in Yangon, Myanmar: randomized controlled trial. Advisor: Alessio Panza, M.D.

Background: The physical and psychological symptoms occurring after diagnosis and during chemotherapy have a negative effect on the quality of life (QOL) of breast cancer patients. Anxiety and depression are also linked with a deprived QOL and prognosis. This study evaluated the effect of peer support intervention on knowledge about chemotherapy, self-efficacy, empathy, consumer satisfaction, anxiety, depression and QOL of female breast cancer patients on chemotherapy in Yangon, Myanmar.

Methods: A randomized controlled trial was conducted at Shwe Yaung Hnin Si Cancer Foundation clinic in Yangon. A total of 74 patients participated and they were assigned randomly into an intervention or a control group. The intervention group received peer support intervention including individual counseling, group meeting, telephone support, and education program during chemotherapy. Data collection was done by interviewer-administered questionnaires at baseline, post-intervention and 2 months follow-up. Independent t-test, chi-square test, analysis of covariance (ANCOVA) test, Quade's test for non-parametric ANCOVA, Mann-Whitney U test, Wilcoxon signed-rank test, and linear mixed models with random intercepts were used in data analysis.

Results: At baseline data collection, there was no significant difference between the intervention and control groups in socio-demographic characteristics, medical history, knowledge about chemotherapy, self-efficacy, empathy, anxiety, depression, global health status/QOL, functioning scores and symptoms scores in QOL, except for role functioning ($p=0.019$). After the intervention, the intervention group had significantly greater mean scores in knowledge about chemotherapy ($p<0.001$), self-efficacy ($p<0.001$), empathy ($p<0.001$), global health status/QOL ($p=0.017$), physical functioning ($p<0.001$), role functioning ($p<0.001$), emotional functioning ($p<0.001$), cognitive functioning ($p=0.002$), social functioning ($p=0.002$), body image ($p=0.032$) and future perspective ($p=0.002$) than the control group. Moreover, the intervention group had significantly smaller mean scores in anxiety ($p=0.013$), depression ($p<0.001$), fatigue ($p=0.009$), and nausea & vomiting ($p=0.022$) than the control group. At follow-up data collection, the intervention group had significantly greater rate of increase in emotional functioning ($p=0.017$) and future perspective ($p=0.030$) than the control group. The intervention group had significantly greater rate of decrease in anxiety ($p=0.009$), depression ($p=0.002$) and breast symptoms ($p=0.014$) than the control group. Besides, the intervention group had significantly lower insomnia score ($p=0.016$) than the control group.

Conclusion: The peer support intervention was effective on improving the knowledge about chemotherapy, self-efficacy and empathy status, and lessening the anxiety and depression status of the participants immediately after the intervention. Regarding the QOL, the intervention program was effective to improve global health status/QOL, physical functioning, role functioning, emotional functioning, cognitive functioning, social functioning, body image and future perspective of the participants. It was also effective to diminish the fatigue, and nausea and vomiting symptoms of the participants immediately after the intervention. The intervention program was also effective on improving emotional functioning and future perspective, and diminishing anxiety, depression, insomnia and breast symptoms of the participants at two months after the intervention. Therefore, the model of the intervention program of this study should be implemented among the breast cancer patients in the future.

Field of Study:	Public Health	Student's Signature .....
Academic Year:	2019	Advisor's Signature .....

ACKNOWLEDGEMENTS

First and foremost, I would like to express my deepest appreciation to my advisor, Dr. Alessio Panza who continuously and convincingly supported my study and research. Without his persistent help and guidance this study would not have been possible.

I would like to thank to my committee Prof. Surasak Taneepanichskul and Assoc. Prof. Ratana Somrongthong for their constant advice and support during my study period. I also love to express my greatest thank to Dr. Nanta Auamkul and Dr. Wandee Sirichokchatchawan for their invaluable advice and kind support for this study.

I would like to convey my deepest gratitude to Prof. Yin Yin Htun, President, and all volunteer healthcare providers from Shwe Yaung Hnin Si Cancer Foundation, for kindly allowing me to conduct this research at the clinic. I further would like to extend my special thanks to Dr. Ohn Hlaing, Patron, from Myanmar Psychological Association for his valuable advice, training program and support for this study. I would also like to appreciate the immense effort put by volunteer peer counselors who actively and willingly facilitated in this study, and all study participants for their kind cooperation during this study.

My special acknowledgement is extended to Prof. Than Tun Sein and Dr. Daw San Shwe for their valuable guidance for my study. I also wish to thank Dr. Pramon Viwattanakulvanid for his valuable advice and kind support in statistical analysis for this study.

My sincere thanks go to all my teachers and staffs at College of Public Health Sciences, Chulalongkorn University. A special thanks also goes to ASEAN Scholarship Committee, Chulalongkorn University. Without their academic, administrative and financial support, I would not have completed my study. I also would like to thank my friends and colleagues who helped me in various ways in relation with this study.

Last but not the least, I would like to express my utmost gratitude to my wife and daughters for their unconditional love, support and encouragement throughout this journey.

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INTRODUCTION

1.1 Problem Statement

Cancer is a major cause of morbidity and mortality that happens among people around the world. There were 14.1 million new cancer cases and 8.2 million cancer deaths in 2012 worldwide. The cancer burden is estimated to exceed 20 million new cancer cases annually by 2025 globally. About half (51%) of all cancer cases occurred in low- and middle-income countries in 1975, 55% in 2007, and predicted to be 61% in 2050 (Ferlay et al., 2015, Kimman et al., 2015).

Estimated new cases for breast cancer was 1.6 million in 2012 globally. Breast cancer was the second most common cancer overall (1.7 million cases) for both sexes, and it ranked fifth as the cause of death (522,000 cases) in 2012. For the women population, breast cancer is the most common cancer occurring in all regions. There were 883,000 cases in less developed regions and 794,000 cases in more developed regions in 2012 (Ferlay et al., 2015).

Breast cancer was the second leading cause of cancer death (198,000 deaths) among women in more developed regions and was the leading cause of cancer death (324,000 deaths) in less developed regions in 2012. Incidence rates varied among the world regions, with rates ranging from 26.8 per 100,000 in Middle Africa to 96 in Western Europe. South East Asia region accounted for 34.8 per 100,000 and ranked as the seventh-lowest incident region among 25 regions in 2012 (Ferlay et al., 2015).

Estimated new cancer cases for Myanmar in 2012 were 64,000 cases, which was done by the International Agency for Research on Cancer (IARC). The cancer morbidity increased gradually since that time. The biggest cancer risks for Myanmar female population are breast and cervical cancer (Angeles, 2016). Cancer country profile by World Health Organization (WHO) reported that, in 2014, breast cancer is the leading type of cancer among Myanmar females and 5,648 new breast cancer cases were identified (WHO, 2014).

The prevalence of depression among breast cancer patients from Asian studies reported a range of 12.5-31% (Zainal et al., 2013). In a study among breast cancer patients in Thailand, the prevalence of anxiety disorder was 16.0%, and that of anxiety symptoms was 19.0%. The prevalence of depressive disorder was 9.0%, and that of depressive symptoms was 16.7% (Lueboonthavatchai, 2007). Among breast cancer in India, 37% were screened for having anxiety while 28% were screened as having depression (Srivastava and Ansari, 2015). In Myanmar, 58% of cancer patients suffered from clinical anxiety and among them, all the breast cancer patients suffered from anxiety (Oo, 2011), and 29.4% of cancer patients suffered from depression (Aung, 2010).

The reference value for global health status/QOL among breast cancer patients by EORTC quality of life group was 61.8±24.6 in a total of 49 countries study (Scott et al., 2008). In Myanmar, the global health status/QOL scale among breast cancer patients was 66.08±21.19 (Htet, 2016).

Breast cancer is a life-threatening and the most prevalent cancer among women around the world with a five-year survival of nearly 85% after diagnosis (Sharif et al., 2010, Tehrani et al., 2011). After diagnosed with breast cancer, women suffer several psychological consequences, containing anxiety and depression (Society, 2017). Depression is common in breast cancer patients (Mens et al., 2016, Xiao et al., 2017). Anxiety and depression of breast cancer patients persist years after the diagnosis and treatment of the disease (Sharif et al., 2010).

Diagnosis and treatment of breast cancer negatively affect every domain of the quality of life (i.e. physical, psychological, social and financial) (Ulger and Yagli, 2010). The physical and psychological symptoms that happen after diagnosis and during chemotherapy have a negative effect on the quality of life and psychological health of breast cancer patients (Zhu et al., 2017). Anxiety and depression are also linked with a deprived quality of life and prognosis in breast cancer patients (Xiao et al., 2017). Not only the patients' own physical and psychological situations but also their families' social and work environments are also affected by the disease (Ulger and Yagli, 2010). Cancer patients have to face higher out-of-pocket expenditures than patients of other chronic diseases and they also have to struggle to maintain

employment-related income to pay for these expenditures. Therefore, financial related distress develops among cancer patients after diagnosis and during treatment leading to compromise the quality of life (Jagsi et al., 2014).

Lifestyle-related risk factors for breast cancer are alcohol consumption, being overweight or obese, lack of physical activity, not having children, not breastfeeding, taking contraception and taking hormonal therapy after menopause. Non-modifiable risk factors for breast cancer are age, sex, ethnicity, genetic factor, having a family history of breast cancer, having a personal history of breast cancer, having dense breast tissue, benign breast conditions, lobular carcinoma in situ (LCIS) of the breast, early menarche, late menopause after age 55 and radiation exposure to the chest (Society, 2017).

Factors associated with anxiety among breast cancer patients were younger age, low income, low level of education, being single and receiving less financial support (Srivastava and Ansari, 2015), no previous history of breast cancer, and early stage of breast cancer (Fatiregun et al., 2016). Smoking may lead to increased anxiety and anxiety may also increase smoking rates (Moylan et al., 2013).

Factors associated to anxiety and depression among breast cancer patients were the number of hospital admissions, and presence of disturbing symptoms (such as pain, respiratory symptoms, and fatigue), poor social support, poor family relationship and functioning, maladaptive problem and conflict solving (Lueboonthavatchai, 2007), and younger age (Gold et al., 2016). Major depression is also associated with higher rates of cigarette smoking and nicotine dependence (Fergusson et al., 2003).

Factors associated with depression in breast cancer patients were younger age, low education, ethnicity, low income or low financial status, the number of children at home, high co-morbidity index (Zainal et al., 2013), lack of accompanying person (Srivastava and Ansari, 2015), fatigue, pain, sleep disturbance, low sexual desire, low survival, increased evening cortisol level, the time elapsed since the end of chemotherapy, receiving chemotherapy, receiving surgery, having repeated cancer discussion, preoperative helplessness or hopelessness, high anxiety levels, more pre-operative depressive symptoms, poor body image, less attractiveness, less feminine,

negative automatic thoughts, more cognitive errors, low fighting spirit and lacking the presence of the meaning of life. Lifestyle factors associated with increased depression in breast cancer patients were poor sleep quality and shorter sleep duration. Social factors associated with increased depression in breast cancer patients were poor social support, being unaccompanied by spouses and requested for help from a psychologist (Zainal et al., 2013).

Marital status revealed contradict findings that being unmarried, widowed or divorced were significantly associated with depression and one study reported that being married was associated with depression. Moreover, the duration of disease also reported contradicting results (Zainal et al., 2013).

The factors associated with low quality of life scores among breast cancer patients were young age, low education, low-performance scale, low socioeconomic status, advanced stage of the disease, metastatic disease (Sharma and Purkayastha, 2017), chemotherapy before radiation therapy, higher BMI, mastectomy, increase in nodes removed, and increased duration of radiation therapy (Sura et al., 2013), pain intensity, fatigue (Heydarnejad et al., 2011), unemployment, poorly differentiated tumor grade, financial difficulty, dyspnea (Safaee et al., 2008), living without a partner (Chang et al., 2014), low income (Yan et al., 2016), co-morbidity (Janz et al., 2009), fatigue, anxiety, the disorder in the body image, sexual issues and complication in the patients' hand (Sharif et al., 2010).

Duration of the disease and menopausal status revealed contradict results among breast cancer patients regarding quality of life (Al-Naggar et al., 2011, Conde et al., 2005, Safaee et al., 2008).

Depending on the type and stage, breast cancer can be treated by local therapy such as surgery and radiotherapy, as well as systemic therapy such as chemotherapy, hormonal therapy, and targeted therapy. There are different types of breast surgery namely; breast-conserving surgery, mastectomy, breast reconstruction, sentinel lymph node biopsy and axillary lymph node dissection. Two main types of radiation therapy that can be used to treat breast cancer are external beam radiation and internal radiation (brachytherapy). Chemotherapy can be given as adjuvant chemotherapy and

neoadjuvant chemotherapy. Adjuvant chemotherapy is used to try to kill any cancer cells that might have been left behind or have spread but can't be seen, even on imaging tests after surgery. Neoadjuvant chemotherapy can be used to try to shrink the tumor before surgery so it can be removed with less extensive surgery. It should also kill any cancer cells that have spread but can't be seen. Chemotherapy can lower the risk of breast cancer recurrence. There are several types of hormone therapy, which can either lower estrogen levels or stop estrogen from acting on breast cancer cells to grow. The targeted drugs are designed to block the growth and spread of cancer cells. Targeted therapy can be listed as follow; targeted therapy for HER2-positive breast cancer, targeted therapy for hormone receptor-positive breast cancer and targeted therapy for breast cancer with gene mutations (Society, 2017).

Intervention for improving anxiety, depression, and quality of life of breast cancer patients which can be delivered by peer supporter as individual support, group support or telephone support have revealed advantageous results among breast cancer patients in Iran (Sharif et al., 2010).

Individual support programs by trained peer facilitators can create non-hierarchical, reciprocal relationships through the sharing of experiences and knowledge with breast cancer patients who have faced similar challenges. The peer individual support intervention was effective to improve depression by reducing stigma and intrusive thoughts, reducing social isolation, normalizing the breast cancer experience, building a sense of belonging and empowerment, reduction of losing interests in life, reducing loneliness and hopelessness among breast cancer patients. In addition, the depression among breast cancer patients will be improved by increasing hope for the future, developing confidence and increasing meaning in life among breast cancer patients in the USA (Lu et al., 2014).

Individual peer support intervention also had a positive effect on anxiety and depression among breast cancer patients. Individual peer support intervention was effective in increasing self-efficacy for self-management of breast cancer and it also provided the opportunity to breast cancer patients to see others successfully manage the problems related to cancer diagnosis and treatment. After getting medical information and support from family, friends, and medical staff, anxiety, and depression will

decrease among breast cancer patients. The duration of the intervention may also influence on improving anxiety and depression of the patients. A short-term intervention like 6-8 weeks may result in positive effect and long-term intervention may reveal significant improvement for anxiety and depression among newly diagnosed breast cancer patients in Korea (Lee et al., 2013).

Peer support groups could be a useful resource for cancer patients to overcome their psychosocial problems. Participation in peer support groups could have a long-term effect on reducing anxiety and depression in breast cancer patients. Membership in a peer support group is beneficial to increase positive cognition, emotions, and behaviors and, in addition, to help to reduce harmful effects of stressful life events by providing emotional, informational, and instrumental support. In a supportive environment, serious depressive symptoms of breast cancer patients diminish. Moreover, improved communication between patient and family as well as patients and healthcare providers may help to improve anxiety and depression of breast cancer patients in Iran (Montazeri et al., 2001).

Short-term telephone support by trained peer supporters could not be concluded that it was effective in improving the anxiety and depression of breast cancer patients in the USA although it revealed temporal changes in patient well-being. However, it is possible that a more intense intervention could show more significant positive effects on anxiety and depression among breast cancer patients (Gotay et al., 2007).

Peer support group intervention plays an important role in improving the quality of life of breast cancer patients as the patients need to depend on a source in relation to breast cancer. After participating in peer support groups, breast cancer patients can be beneficial in reducing anxiety, depression, loneliness, and symptoms such as anorexia, insomnia, gastrointestinal disorder, and fatigue, as well as improving body image, sexual function, satisfaction in sexual performance and attitude towards the future. The peer group method is more effective for improving the sexual function because they can talk without shame about their sexual issues in a more relaxed environment and they can find more satisfaction in their life (Sharif et al., 2010).

Individual support and telephone support by a peer can improve the quality of life of breast cancer patients by resulting in a sense of hope, altruism, and being normal in patients. Visiting individuals in similar conditions create a sense of belonging and sympathy for patients and provides information about how to cope with the disease. The key aspect of this type of support was similar experiences of the peer supporter and the patient. The presence of peer supporters covers the approach of patients for coping with cancer by increasing the understanding of the normal process of the disease and providing emotional support. Individual support and telephone support by a peer can generate a sense of power, hope, confidence, cooperation, and familiarity with others, and can also increase the level of confidence. This change resulted from the determination of personal identity as a product of having contacts with sympathizing individuals and also the creation of new friendships through peer supporters (Taleghani et al., 2012).

Knowledge sharing from peer supporters who have experienced the same challenging situation of having breast cancer will make the patients ready by giving them an understanding of what to expect and how to handle the disease (Lu et al., 2014). Moreover, learning from peer supporters will make the patients relief and assurance to face the disease, resulting in a higher life expectancy (Sharif et al., 2010). When breast cancer patients connect with each other, empathy will develop among them and they can talk about their experiences and problems that they face, forming a helpful atmosphere to share knowledge and get awareness (Sharif et al., 2010).

The barriers that the breast cancer patients experienced during accessing treatment have a significant effect on their quality of life. The most commonly reported barriers are unavailability of cancer care at resident clinics and the distance to the cancer care center. Moreover, difficulty to get transport for accessing cancer care, incapable of paying insurance or lack of insurance, and clinic-related concerns (availability of physician, inconvenient clinic hours, and staff who can talk in native language) were also stated (Goodwin et al., 2017). Additionally, lack of awareness and lack of physician referral were also reported barriers in accessing cancer care services at oncology outpatient (Kumar et al., 2012).

Clinic-relates barriers during treatment included long waiting time at the clinic, abundant paperwork, lack of native-speaking staff, lack of female healthcare provider and lack of cultural competence of staff (Goodwin et al., 2017). In addition, difficulties to understand treatment recommendations, worries about getting treatment, worries about side effects, lack of ability in getting all prescribed medication, worries for lost incomes due to illness, worries for lost incomes due to attending medical appointments, and forgetting medical appointments were the barriers that the breast cancer patients experienced during cancer treatment (Ell et al., 2005).

The factors that will inhibit the process of improving anxiety and depression among breast cancer patients were difficulties in communication with family members, difficulties in communication with healthcare providers, worries about family members especially children, and unmet needs comprising informational support and approaches how to cope with the disease (Montazeri et al., 2001).

The factors that can inhibit the effectiveness of peer support intervention are weak intervention, insufficient observation period, and inappropriateness of the training program for support partners (Lee et al., 2013). Culture is an influential factor in sexual issues and body-image. Asian women do not like to talk about their sexual problems and consider it shameful and irrational (Sharif et al., 2010). Results of the peer support group intervention can also be affected by the negative interactions of family and friends, negative comparison and the presence of some inhibitory thoughts in breast cancer patients (Taleghani et al., 2012).

After reviewing the literature in the online database PubMed, the website of the Department of Medical Research, Myanmar and the website of the University of Public Health, Myanmar by using the keywords and study selection criteria (described in section 2.3), 12 studies were identified. Among them, 5 studies were conducted in high-income countries and 7 in Asian countries.

The researcher could not identified the previous study that evaluated the effect of peer support intervention on anxiety, depression and quality of life of breast cancer patients in Myanmar.

The aim of this study is to form a peer support group and to evaluate the effect of peer support intervention on knowledge about chemotherapy, self-efficacy, empathy, consumer satisfaction, anxiety, depression, and quality of life of female breast cancer patients on chemotherapy in Yangon, Myanmar.

1.2 Research Question

1. Is the Peer Support Multi-components Intervention effective on improving the knowledge about chemotherapy of female breast cancer patients on chemotherapy in Yangon, Myanmar?

2. Is the Peer Support Multi-components Intervention effective in improving the self-efficacy of female breast cancer patients on chemotherapy in Yangon, Myanmar?

3. Is the Peer Support Multi-components Intervention effective in improving the empathy of female breast cancer patients on chemotherapy in Yangon, Myanmar?

4. Is the Peer Support Multi-components Intervention effective in improving the consumer satisfaction of female breast cancer patients on chemotherapy in Yangon, Myanmar?

5. Is the Peer Support Multi-components Intervention effective in improving the anxiety scores of female breast cancer patients on chemotherapy in Yangon, Myanmar?

6. Is the Peer Support Multi-components Intervention effective in improving the depression scores of female breast cancer patients on chemotherapy in Yangon, Myanmar?

7. Is the Peer Support Multi-components Intervention effective in improving the quality of life scores of female breast cancer patients on chemotherapy in Yangon, Myanmar?

1.3 Research Objectives

1.3.1 General Objective

To evaluate the effect of Peer Support Multi-components Intervention on knowledge about chemotherapy, self-efficacy, empathy, consumer satisfaction, anxiety, depression, and quality of life of female breast cancer patients on chemotherapy in Yangon, Myanmar

1.3.2 Specific Objectives

1. To examine the effect of Peer Support Multi-components Intervention by comparing the knowledge scores of participants of intervention and control groups before and after the intervention

2. To examine the effect of Peer Support Multi-components Intervention by comparing the self-efficacy scores of participants of intervention and control groups before and after the intervention

3. To examine the effect of Peer Support Multi-components Intervention by comparing the empathy scores of participants of intervention and control groups before and after the intervention

4. To examine the effect of Peer Support Multi-components Intervention by comparing the consumer satisfaction scores of participants of intervention and control groups after the intervention

5. To examine the effect of Peer Support Multi-components Intervention by comparing the anxiety scores of participants of intervention and control groups before and after the intervention

6. To examine the effect of Peer Support Multi-components Intervention by comparing the depression scores of participants of intervention and control groups before and after the intervention

7. To examine the effect of Peer Support Multi-components Intervention by comparing the quality of life scores of participants of intervention and control groups before and after the intervention

1.4 Research Hypotheses

1. Peer Support Multi-components Intervention has a significant effect on improving knowledge scores of female breast cancer patients on chemotherapy in Yangon, Myanmar.

2. Peer Support Multi-components Intervention has a significant effect on improving self-efficacy scores of female breast cancer patients on chemotherapy in Yangon, Myanmar.

3. Peer Support Multi-components Intervention has a significant effect on improving empathy scores of female breast cancer patients on chemotherapy in Yangon, Myanmar.

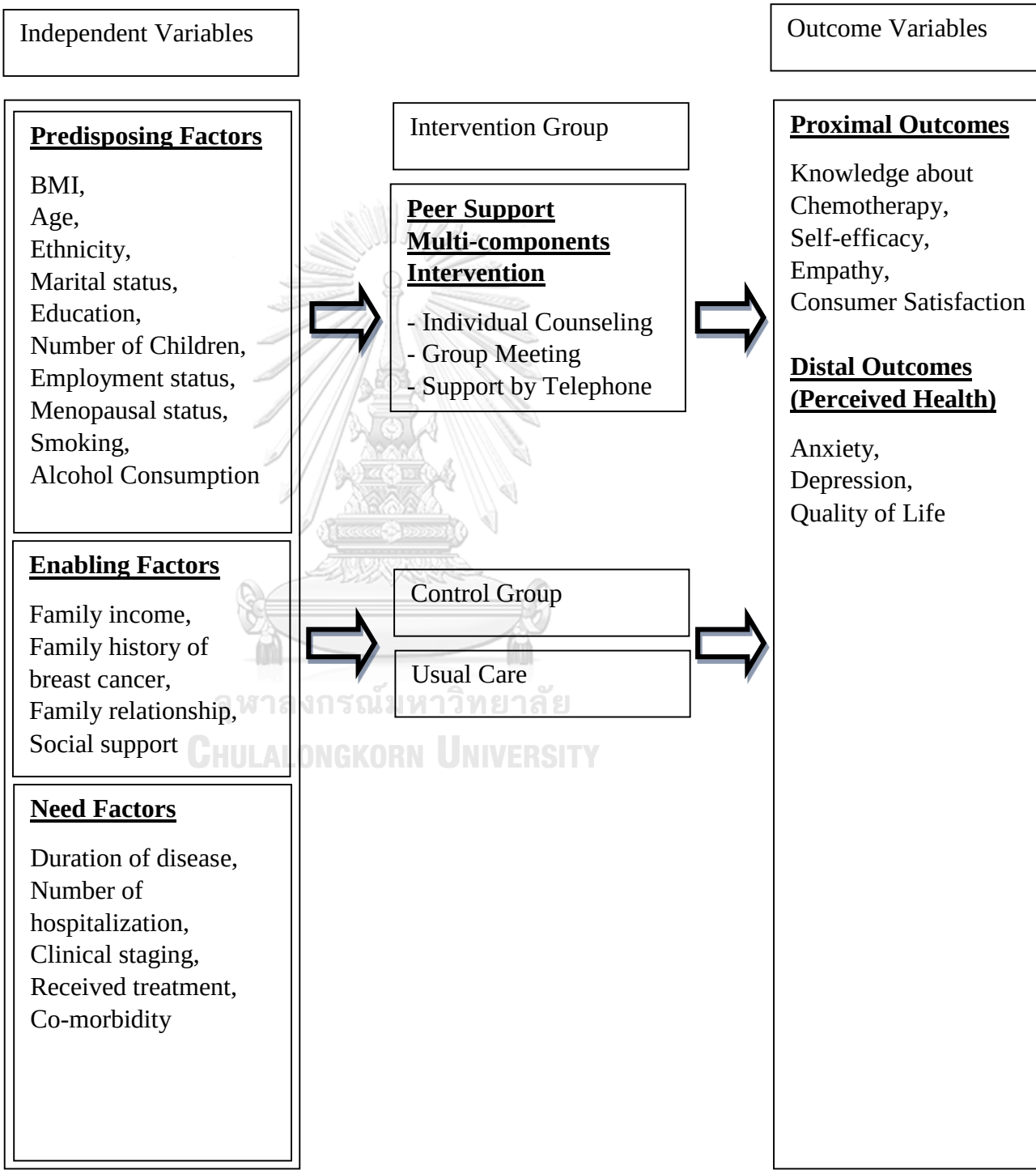
4. Peer Support Multi-components Intervention has a significant effect on improving consumer satisfaction scores of female breast cancer patients on chemotherapy in Yangon, Myanmar.

5. Peer Support Multi-components Intervention has a significant effect on improving anxiety scores of female breast cancer patients on chemotherapy in Yangon, Myanmar.

6. Peer Support Multi-components Intervention has a significant effect on improving depression scores of female breast cancer patients on chemotherapy in Yangon, Myanmar.

7. Peer Support Multi-components Intervention has a significant effect on improving the quality of life scores of female breast cancer patients on chemotherapy in Yangon, Myanmar.

1.5 Conceptual Framework



1.6 Operational Definitions

The following variables were measured by the interviewer.

BMI: refers to the body mass index (BMI) of the participant which is based on the weight and height. Weight was measured with a weighing machine and height was measured with a stadiometer. Then the BMI of the participant was calculated.

The following variables were recorded by the interviewer using the self-reported method by the participant.

Age: refers to the completed age at the last birthday of the participant at the time of the interview.

Ethnicity: refers to the ethnicity of the participant in terms of Kachin, Kayah, Kayin, Chin, Bamar, Mon, Rakhine, Shan, and Others.

Marital status: refers to the condition of the marriage of the participant at the time of the interview and it is classified into Single, Married, and Widow/Divorced.

Education: refers to the highest level of education that the participant had attained at the time of the interview. It is classified into Illiterate, Never gone to school but can read and write simple Myanmar language, Primary School (equivalent to Grade 1-5), Middle School (equivalent to Grade 6-8), High School (equivalent to Grade 9-11), and College or University and above.

The number of children: refers to the total number of children that the participant has at the time of the interview.

Employment status: refers to the job that the participant does at the time of interview which is classified into Housewife, Employed and Unemployed.

Menopausal status: refers to the menopausal status of the participants at the time of the interview classified into pre-menopause and post-menopause. Post-menopause is defined by at least 12 months of amenorrhea (Conde et al., 2005).

Smoking: refers to the history of smoking of the participant which is classified into 4 categories: Never-smoker, Ex-smoker, Occasional smoker and Daily smoker. (Never-smoker: having never smoked or smoked sometimes but fewer than 100 times in her lifetime, Ex-smoker: smoking at least 100 times, and not having smoked for at least the past month, Occasional smoker: smoking at least 100 times, and most recently within the last month but not the current date or the day prior, Daily smoker: smoking at least 100 times in her lifetime, regularly for at least 1 year and most recently the current date or the day prior) (Heikkinen et al., 2008).

Alcohol consumption: refers to the history of drinking alcohol of the participant which is classified into 4 categories: Non-drinker, Ex-drinker, Moderate drinker and Heavy-drinker. (Non-drinker: no drinking occasion previously, Ex-drinker: no drinking occasion in the previous month, Moderate drinker: < 24 g/day during any drinking occasion in the previous month, Heavy drinker: ≥ 24 g/day during any drinking occasion in the previous month) (Ortola et al., 2016).

Family income: refers to the amount of monthly income in Kyats earned by the whole family of the participant.

Family history of breast cancer: refers to the status of being occurring previously of breast cancer among the relatives of the participant.

Family relationship: refers to the condition of the relationship between the participant and the family members of the participant.

Social support: refers to the care and assistance that the participant receives from friends or neighbors.

Duration of disease: refers to the duration in months between the time of diagnosis of breast cancer of the participants and the time of the interview.

The number of hospitalization: refers to the number of hospitalization of the participant for treating breast cancer between the time of diagnosis of breast cancer and the time of interview.

The following variables were recorded by the interviewer using the self-reported method by the participant and cross-checking was done by using the medical records of the participant.

Clinical staging: refers to the clinical staging of the breast cancer of the participants defined by TMN staging at the time of the interview.

Received treatment: refers to the type of treatments previously done for breast cancer of the participants.

Co-morbidity: refers to the simultaneous presence of other chronic diseases or health conditions that the patient has at the time of interview.

The intervention

Individual counseling: refers to the method of assisting the participants which includes the utilization of specific spoken, non-spoken and interacting assistances to help alteration, after that the participants have improvement and find another means of reasoning and performing. In this study, the counseling session was delivered 2 times for each participant during the intervention period by the trained peer counselor to the participant.

Group meeting: refers to the group meeting that takes the participants together, after that they can discover answers to solve common difficulties and get help from other participants who know each other very well. The group meeting was facilitated by the trained peer facilitator to the group of participants. The group meetings were held 5 times for each participant during the intervention period.

Support by telephone: refers to the peer support by telephone which was delivered by trained peer facilitator to the participant of the study. The support by telephone was done 10 times for each participant by the peer facilitator.

The following variables were recorded by the interviewer using the self-reported method by the participant.

Knowledge about Chemotherapy: refers to the knowing and understanding of the participants about the side effects and management of these side effects regarding chemotherapy.

Self-efficacy: refers to the personal judgment of the participant on how she is able to do particular performance well which is needed for breast cancer.

Empathy: refers to the capability of the participant to know and share the emotional state of peer supporter and other participants during the intervention period.

Consumer satisfaction: refers to the judgment of participants of the intervention group on peer support intervention and participants of both groups on the health care services that they receive at the clinic during the treatment.

Anxiety: refers to the feeling of worry, nervousness, or unease of the participants which was measured by 7 questions, 2 from Hospital Anxiety and Depression Scale (HADS) and 5 from Self-rating Anxiety Scale (SRAS).

Depression: refers to the feelings of severe despondency and dejection of the participants which was measured by 7 questions, 3 of them adopted from Hospital Anxiety and Depression Scale (HADS) and 4 from Self-rating Depression Scale (SRDS).

Quality of life: refers to the health standard, relief, and joy felt by the participants which were measured by EORTC QLQ-C30 and EORTC QLQ-BR23 questionnaires.

CHAPTER (II)

LITERATURE REVIEW

2.1 Breast Cancer

2.1.1 Start and Spread of Breast Cancer

Cancer is the uncontrolled growth and spread of cells. It can occur in almost any part of the body. The abnormal growth of cells often enter nearby tissue and can reach to distant sites. Prevention of many cancers can be done by avoiding exposure to common risk factors, such as smoking tobacco. Moreover, if cancers are detected early, a significant proportion of cancers can be treated, by surgery, chemotherapy or radiotherapy (WHO, 2018).

Breast cancer begins when cells in the breast start to grow abnormally. These cells usually become a tumor that can be detected by an x-ray or can be detected as a lump during the examination. When the cells invade into the nearby tissues or reach distant parts of the body, the tumor becomes cancer. Breast cancer is very common in women, but it can also occur in men too (Society, 2017).

Most of the breast tumors are not malignant but benign. Benign breast lumps are abnormal growths, but they don't extend outside of the breast. Benign breast lumps are not life-threatening but they can increase the risk of developing breast cancer. Any changes in the breast should be examined by healthcare providers to define if it is cancer or not (Society, 2017).

Breast cancer can metastasize when cancer cells enter into the bloodstream or lymphatic drainage. The cancer cells are taken to other parts of the body. Breast cancer cells get into the lymphatic system, the start to proliferate in the lymph nodes. The lymph vessels that come out of the breast flow into axillary lymph nodes, supraclavicular lymph nodes, infraclavicular lymph nodes and internal mammary lymph nodes (Society, 2017).

When cancer cells reach the lymphatic system and lymph nodes, the chance of the cancer cells traveling through the lymphatic system and spreading to the other sites of the body becomes higher. When breast cancer cells are found in more numbers of

lymph nodes, the cancer is more likely to be found in the other parts of the body. Therefore, the number of lymph nodes that are identified with cancer cells has an effect on the treatment plan. However, not all breast cancer cases with cancer cells in the lymphatic system develop distance metastasis. Breast cancer cases without lymph node involvement also have the chance to develop distance metastasis in the future (Society, 2017).

2.1.2 Types of Breast Cancer

Intraductal carcinoma of the breast which is also called ductal carcinoma in situ (DCIS) is a non-invasive or pre-invasive type of cancer. Lobular carcinoma in situ (LCIS) which also called lobular neoplasia is not cancer although with the confusing name. In LCIS, the cells are developing in the lobules of the mammary glands, but they do not invade the lobular wall (Society, 2017).

In invasive breast cancer, cancer cells invade the nearby breast tissues. There are several different types of invasive breast carcinoma. The most common invasive breast carcinomas are invasive lobular carcinoma and invasive ductal carcinoma. Among invasive breast cancers, inflammatory breast cancer is not common. Paget disease of the nipple begins in the ducts of the breast and it reaches to the skin of the nipple and later to the areola of the breast. Phyllodes tumors are not common types of breast tumors. They grow in connective tissues, ducts or lobules of the breast. Most of them are benign but some of them are malignant. Angiosarcoma begins in the blood vessels lining cells and extends to the breast tissue or skin of the breast. Some of them are associated with the previous radiotherapy to that area (Society, 2017).

2.1.3 Stages of Breast Cancer

The stage of cancer helps determine the seriousness of cancer and the best treatment for it. Stage 0 is the earliest stage of breast cancer (carcinoma in situ). The stages of the breast cancer range from stage I to stage IV. The lower number of the stage means that the spread of the cancer is less. The higher number of the stage means the spread of cancer is more. The earlier number represents the lower stage (Society, 2017).

The most commonly used staging system for breast cancer is the TNM system of the American Joint Committee on Cancer (AJCC). TNM staging is based on 7 key information:

- The size and extent of the tumor (T)
- The spread of cancer cells to adjacent lymph nodes (N)
- The distant metastasis (M)
- Estrogen Receptor (ER) status
- Progesterone Receptor (PR) status
- Her2/neu (Her2) status:
- Grade of cancer (G)

Numbers or letters that come after T, N, and M give more information about each of these categories. Higher numbers indicate that the cancer is in a more advanced stage. This information is combined in a stage grouping procedure to determine an overall stage (Society, 2017).

Details of the TNM staging system

T categories for breast cancer

In T category, the number from 0 to 4 that follows T indicates the size of the tumor and the spread of the tumor to the chest wall or the skin of the breast. Higher T number indicates the larger tumor size and extensive spread to the nearby breast tissue (Society, 2017).

*Table 1*American Joint Committee on Cancer Definition of Primary Tumor (T)—Clinical (cT) [Source: (Giuliano et al., 2017)]

Category	Criteria
TX	Primary tumor cannot be assessed
T0	No evidence of primary tumor
Tis (DCIS)	Ductal carcinoma in situ (DCIS)
Tis (Paget)	Paget disease of the nipple NOT associated with invasive carcinoma and/or carcinoma in situ (DCIS) in the underlying breast parenchyma. Carcinomas in the breast parenchyma associated with Paget disease are categorized based on the size and characteristics of the parenchymal disease, although the presence of Paget disease should still be noted.
T1	Tumor ≤ 20mm in greatest dimension
T2	Tumor > 20mm but ≤ 50mm in greatest dimension
T3	Tumor > 50mm in greatest dimension
T4	Tumor of any size with direct extension to the chest wall and/or to the skin (ulceration or macroscopic nodules); invasion of the dermis alone does not qualify as T4

N categories for breast cancer

In N category, the number from 0 to 3 that follows N indicates the spread of cancer cells to nearby lymph nodes and, if so, the number of involved lymph nodes (Society, 2017).

Table 2American Joint Committee on Cancer Definition of Regional Lymph Nodes—Clinical (cN) [Source: (Giuliano et al., 2017)]

Category	Criteria
NX	Regional lymph nodes cannot be assessed (e.g., previously removed)
N0	No regional lymph node metastases (by imaging or clinical examination)
N1	Metastases to movable ipsilateral level I and II axillary lymph node(s)
N1mi	Micrometastases (approximately 200 cells, larger than 0.2 mm, but none larger than 2.0 mm)
N2	Metastases in ipsilateral level I and II axillary lymph nodes that are clinically fixed or matted; or in ipsilateral internal mammary lymph nodes in the absence of axillary lymph node metastases
N2a	Metastases in ipsilateral level I and II axillary lymph nodes fixed to one another (matted) or other structures
N2b	Metastases only in ipsilateral internal mammary lymph nodes in the absence of axillary lymph node metastases
N3	Metastases in ipsilateral infraclavicular (level III axillary) lymph node(s) with or without level I and II axillary lymph node involvement; or in ipsilateral internal mammary lymph node(s) with level I and II axillary lymph node metastases; or metastases in ipsilateral supraclavicular lymph node(s) with or without axillary or internal mammary lymph node involvement
N3a	Metastases in ipsilateral infraclavicular lymph node(s)
N3b	Metastases in ipsilateral internal mammary lymph node(s) and axillary lymph node(s)
N3c	Metastases in ipsilateral supraclavicular lymph node(s)

M categories for breast cancer

In M category, the number from 0 to 1 that follows M indicates the spread of the cancer cells to distant parts of the body (Society, 2017).

Table 3American Joint Committee on Cancer Definition of Distance Metastasis (M) [Source: (Giuliano et al., 2017)]

Category	Criteria
M0	No clinical or radiographic evidence of distant metastases
M0(i+)	No clinical or radiographic evidence of distant metastases in the presence of tumor cells or and no deposits no greater than 0.2mm detected microscopically or by using molecular techniques in circulating blood, bone marrow, or other nonregional lymph node tissue in a patient without symptoms or signs of metastases
M1	Distant metastases detected by clinical and radiographic means (cM) and/or histologically proven metastases larger than 0.2mm (pM)

Table 4TNM Anatomic Stage Grouping for Breast Cancer [Source: (Giuliano et al., 2017)]

When T is	And N is	And M is	Then the stage group is
Tis	N0	M0	0
T1	N0	M0	I A
T0	N1mi	M0	I B
T1	N1mi	M0	I B
T0	N1	M0	II A
T1	N1	M0	II A
T2	N0	M0	II A
T2	N1	M0	II B
T3	N0	M0	II B
T1	N2	M0	III A
T2	N2	M0	III A
T3	N1	M0	III A
T3	N2	M0	III A
T4	N0	M0	III B
T4	N1	M0	III B
T4	N2	M0	III B
Any T	N3	M0	III C
Any T	Any N	M1	IV

2.1.4 ECOG Performance Scale

Eastern Cooperative Oncology Group (ECOG) performance scale is one of the most common scales to evaluate the overall fitness of cancer patients.

Table 5ECOG Performance Status Scale [Source: (Boon and Davidson, 2006)]

Grade	ECOG Performance Status
0	Fully active, able to carry on all usual activities without restriction and without the aid of analgesics
1	Restricted in strenuous activity but ambulatory and able to carry out light work or pursue a sedentary occupation. This group also contains patients who are fully active, as in grade 0, but only with the aid of analgesics
2	Ambulatory and capable of all self-care but unable to work. Up and about more than 50% of waking hours
3	Capable of only limited self-care; confined to bed or chair more than 50% of waking hours
4	Completely disabled; unable to carry out any self-care and confined totally to bed or chair

2.1.5 Signs and Symptoms

A new lump or mass is the most common symptom of breast cancer. A hard mass that has no pain but with irregular edges is more possible to be cancer. But breast cancer can also be painful and soft with rounded-edges. Therefore, any changes in the breast or any new breast mass or lump should be examined by the experienced healthcare professional. Other possible symptoms of breast cancer are swelling of the breast, irritation or dimpling of the skin of the breast, pain in breast, pain in the nipple, retraction of nipple, redness, scaliness, or thickening of the nipple or breast skin, and discharge from the nipple (Society, 2017).

Sometimes, before the tumor in the breast is not noticed, cancer cells can spread to nearby lymph nodes forming a lump or swelling. The healthcare professionals have to check the swollen lymph nodes. Whenever women find these changes in their breasts and their bodies, they have to inform the healthcare providers for further examination (Society, 2017).

2.1.6 Risk Factors

Lifestyle-related risk factors for breast cancer are alcohol consumption, being overweight or obese, lack of physical activity, not having children, not breastfeeding, taking contraception and taking hormonal therapy after menopause. Non-modifiable risk factors for breast cancer are age, sex, ethnicity, genetic factor, having a family history of breast cancer, having a personal history of breast cancer, having dense breast tissue, benign breast conditions, lobular carcinoma in situ (LCIS) of the breast, early menarche, late menopause after age 55 and radiation exposure to the chest (Society, 2017).

2.1.7 Screening Tests

Taking regular screening tests is the most trustworthy mean to discover breast cancer early. The aim of screening tests for breast cancer is to discover it before it develops symptoms (like a palpable lump). Breast cancers detected during screening examinations are more probable to be smaller and still limited to the breast. The size of breast cancer and distance metastasis are some of the most important features in expecting the prognosis of a breast cancer patient (Society, 2017).

Regular mammograms are helpful to detect breast cancer early when treatment is most effective. A mammogram can detect changes in the breast that possible to be cancer years before physical symptoms develop. Clinical breast examination and breast self-examination are helpful to detect breast cancer early. The woman can examine themselves to find the symptom such as breast lump during usual actions such as bathing or dressing (Society, 2017).

2.1.8 Investigations

Different tests can be applied to detect and diagnose breast cancer. Mammogram, ultrasound and magnetic resonance imaging (MRI) of the breast are the imaging tests for finding breast cancer. When mammograms, other imaging tests, or a physical examination suggests that the changes in the breast to be cancer, a biopsy of the breast can be done. A biopsy if the definitive investigation for cancer. Fine needle aspiration (FNA) biopsy, core needle biopsy, surgical (open) biopsy, and lymph node biopsy are commonly done. More investigation such as chest X-rays, CT scans,

Ultrasound, bone scans, PET scans, or MRI scans can also be done to detect the spread of cancer to other parts of the body or not, (Society, 2017).

2.1.9 Treatments

There are several types of treatment for breast cancer, according to the type and stage. Some are local treatments, in which they treat the lump with no effect on the other parts of the body. Surgery and radiation therapy are local treatments for breast cancer. Systemic therapies use drugs to reach cancer cells almost anywhere in the body. They can be given by orally or intravenously. Different types of drug treatment can be used for different types of breast cancer, including chemotherapy, hormonal therapy, and targeted therapy. Most of the breast cancer patients receive more than one type of treatment for their disease (Society, 2017).

Surgery for Breast Cancer

Most of the breast cancer patients are treated with some type of surgery as part of their treatment. There are different types of surgical treatment for breast cancer, and the choice of the surgical method depends on the situation. Surgical treatment can be done as follow:

- Breast-conserving surgery or mastectomy are done to remove breast cancer as much as possible
- Sentinel lymph node biopsy or axillary lymph node dissection are done to find out the spread of cancer cells to the lymph nodes
- Breast reconstruction is done to restore the shape of the breast after removing the cancer
- Surgical treatment is also done to relieve symptoms of the advanced stage of cancer

Radiation for Breast Cancer

Some of the breast cancer patients need radiation therapy, together with other treatments. The need for radiation therapy depends on the factors such as type of surgery that had done to them, the spread of cancer cells to the nearby lymph nodes or

distance metastasis, and the age of the patient in some cases. Large tumors or tumors with skin involvement might also need radiation therapy. The patient could receive only one type or combination of different types of radiation therapy. Radiation therapy destroys cancer cells by using high-energy rays or particles. External beam radiation and internal radiation (brachytherapy) are the two main types of radiation therapy that are used to treat breast cancer (Society, 2017).

The most common type of radiation therapy for breast cancer patients is external beam radiation. For breast cancer patients who had undergone breast-conserving surgery (BCS), internal radiation can be used together with external beam radiation. Size of the tumor, site of the tumor and other factors may be the limitations in receiving brachytherapy (Society, 2017).

Chemotherapy for Breast Cancer

Chemotherapy treats the cancer using cancer-killing drugs that are be given intravenously or orally. The drugs go into the bloodstream and reach cancer cells around the body. Sometimes, chemotherapy is given directly into the spinal fluid which is the surrounding for the brain and the spinal cord. Not all breast cancer patients need chemotherapy, but there are some conditions in which chemotherapy may be used:

- **Adjuvant chemotherapy**: Adjuvant chemotherapy is used to kill cancer cells that have been missing behind after surgery or have spread to distant sites but can't be detected on imaging tests. Adjuvant chemotherapy can lower the possibility of recurrence of breast cancer.
- **Neoadjuvant chemotherapy**: Neoadjuvant chemotherapy is used to try to shrink the tumor before surgery for removing it with less extensive surgery. It can also kill cancer cells that have spread but can't be detected. Similar to adjuvant chemotherapy, neoadjuvant chemotherapy can lower the possibility of recurrence of breast cancer.
- **For advanced breast cancer**: Chemotherapy can be used as the major treatment for patients with cancer spread beyond the breast and axillary area, either after diagnosis or after first treatments.

Chemotherapy is most effective in most cases when drug combinations are used. Usually, chemotherapy is used in combinations of 2 or 3 drugs. Drugs used in chemotherapy for breast cancer are usually given intravenously, either as an injection or as an infusion. This can be done in a clinic or hospital. Central venous catheters, central venous access devices, or central lines are often required to administer chemotherapy. They are used for administering medicines, blood products, nutrients, or fluids into the bloodstream. Chemotherapy is administered in cycles, with each period of drug administration followed by a period of rest to give time to get well from the effects of chemotherapy. Cycles are most often 2 or 3 weekly. The variation of schedule depends on the drugs used. Adjuvant and neoadjuvant chemotherapy is often administered for a total of 3 to 6 months, depending on the using drugs. The length of treatment for advanced breast cancer is also depending on the action of the drugs and side effects of the treatment that the patient has (Society, 2017).

Chemotherapy, depending on the type and dose of drugs used and the duration of the treatment, can develop side effects. The most common side effects are hair loss, changes in nails, mouth sores, loss of appetite, changes in weight, nausea, vomiting, and diarrhea. Chemotherapy also has an effect on the blood-forming cells of the bone marrow, which can occur increased chance of getting infections due to low counts of white blood cells, easy bruising or bleeding due to low platelet counts and fatigue due to low counts of red blood cells and other reasons. These side effects usually diminish after finishing the treatment. Other possible side effects are changes in menstrual cycles, fertility problems, heart disease, neurological disease, hand-foot syndrome, chemo brain, increased chance of developing leukemia, feeling sick and fatigue. Some drugs can be used to help prevent or reduce some side effects of chemotherapy (Society, 2017).

Hormone Therapy for Breast Cancer

Hormonal therapy is also a systemic therapy, and it reaches cancer cells around the body. It is administered for breast cancer patients with hormone receptor-positive, and it is not helpful for breast cancer patients with hormone receptor-negative. Hormonal therapy is often used after surgery to help in reducing the possibility of the recurrence of cancer. Sometimes it is administered before surgery as well. Hormonal

therapy is usually administered for at least 5 years. About two-thirds of breast cancer cases are hormone receptor-positive. For this kind of cancers, high estrogen levels support the growth and spreading of cancer cells (Society, 2017).

Estrogen helps in the growth of hormone-receptor-positive breast cancers, therefore, lowering the estrogen level can help in slowing the growth of cancer or help in preventing it from recurrence. There are different types of hormonal therapy, which use different methods to keep lower the estrogen level to prevent the growth of cancer. Most methods of hormonal therapy for breast cancer either lower estrogen levels or stop the action of estrogen on breast cancer cells. The most common side effects of hormonal therapy include hot flashes, vaginal dryness, vaginal discharge, mood swings, night sweats, headache, mild nausea, bone pain and pain at the injection site (Society, 2017).

Targeted Therapy for Breast Cancer

The drugs used in targeted therapy are designed to prevent the growth and spreading of cancer cells. These drugs attack all quickly growing cells including cancer cells. Drugs used in targeted therapy sometimes are helpful even when drugs used in chemotherapy are not. Some targeted drugs are helpful for other treatments to be more effective. Drugs used in targeted therapy may also have some side effects. Targeted therapy is used for HER2-positive breast cancer, for hormone receptor-positive breast cancer and women with BRCA gene mutations (Society, 2017).

2.2 Burden of Breast Cancer

Breast cancer is the most common type of cancer among women in the developed world as well as in the less developed world. It is estimated that over 508,000 women died in 2011 by breast cancer worldwide. Although breast cancer is assumed to be common in developed countries, almost 50% of breast cancer cases and 58% of breast cancer deaths occur in less developed countries. Incidence rates vary greatly around the world, from 19.3 per 100,000 women in Eastern Africa to 89.7 per 100,000 women in Western Europe. In most of the developing regions of the world, the incidence rates are below 40 per 100,000 women. Most African countries have the lowest incidence rates although incidence rates are increasing for breast cancer (WHO, 2016).

Breast cancer survival rates vary greatly around the world, ranging from 80% or more in North America, Sweden, and Japan, to about 60% in middle-income countries, and less than 40% in low-income countries (Coleman et al., 2008). The low survival rates in less developed countries can be clarified chiefly due to the lack of early detection programs, resulting in a high proportion of advanced-stage disease, as well as due to the inadequate diagnosis and treatment services. Breast cancer is the most common cancer among women globally and is increasing mainly in developing countries where the majority of cases are diagnosed in advanced stages (WHO, 2016).

Breast cancer is the most occurring cancer among women, affecting more than 1.5 million women each year, and also leads to the highest number of cancer-related deaths for women. In 2015, 570,000 deaths occur among women by breast cancer which is about 15% of cancer deaths among women by all types of cancer. While breast cancer occurrence becomes higher among women in more developed regions, the occurrence of breast cancer is also increasing in nearly every region globally (WHO, 2017a).

Breast cancer is ranked as the fifth cause of death among all types of cancer overall (522,000 deaths). It is also the most common cause of cancer death in women in less developed regions (324,000 deaths, 14.3% of total). It is the second-ranking cause of cancer death in more developed regions (198,000 deaths, 15.4%). The range in mortality rates between world regions is less than the incidence because the survival

from breast cancer is more favorable in developed regions with high-incidence (Ferlay et al., 2015).

A burden of cancer in the ASEAN countries recently estimated that there were over 700,000 new cases of cancer and 500,000 cancer deaths in 2008, occurring about 7.5 million disability-adjusted life years lost per year. The burden of cancer in ASEAN countries is growing due to the aging and growth of the population (Kimman et al., 2015).

In 2014, in Brunei, breast cancer was the second leading cause of death and it accounted for 15.4% of all cancer death among female cancer patients. Breast cancer was first leading cancer and 83 new breast cancer cases were identified.

In 2014, in Cambodia, breast cancer was the third leading cause of death and it accounted for 10.3% of all cancer death among female cancer patients. Breast cancer was second leading cancer and 1,255 new breast cancer cases were identified.

In 2014, in Indonesia, breast cancer was the first leading cause of death and it accounted for 21.4% of all cancer death among female cancer patients. Breast cancer was first leading cancer and 48,998 new breast cancer cases were identified.

In 2014, in Laos, breast cancer was the second leading cause of death and it accounted for 10.6% of all cancer death among female cancer patients. Breast cancer was second leading cancer and 472 new breast cancer cases were identified.

In 2014, in Malaysia, breast cancer was the first leading cause of death and it accounted for 24.5% of all cancer death among female cancer patients. Breast cancer was first leading cancer and 5,410 new breast cancer cases were identified.

In 2014, in the Philippines, breast cancer was the first leading cause of death and it accounted for 27.7% of all cancer death among female cancer patients. Breast cancer was first leading cancer and 18,327 new breast cancer cases were identified.

In 2014, in Singapore, breast cancer was the first leading cause of death and it accounted for 19.4% of all cancer death among female cancer patients. Breast cancer was first leading cancer and 2,524 new breast cancer cases were identified.

In 2014, in Thailand, breast cancer was the third leading cause of death and it accounted for 13.3% of all cancer death among female cancer patients. Breast cancer was first leading cancer and 13,653 new breast cancer cases were identified.

In 2014, in Vietnam, breast cancer was the third leading cause of death and it accounted for 12.5% of all cancer death among female cancer patients. Breast cancer was first leading cancer and 11,067 new breast cancer cases were identified.

In 2014, in Myanmar, breast cancer was the third leading cause of death and it accounted for 11.8% of all cancer death among female cancer patients. Breast cancer was first leading cancer and 5,648 new breast cancer cases were identified (WHO, 2014).

2.3 Studies Selection

PubMed was selected as the only database for study selection and was searched in June 2018 (last search on June 18, 2018). The search strategy aimed to identify articles that find the effect of peer support intervention on improving the anxiety, depression, and quality of life of breast cancer patients who are undergoing chemotherapy using the keywords (Table 6) and which had been published in English until the time of the search. No limits were set as to the study design used and whether there was a control group to compare with the intervention group or not. The time limit was set for 20 years (from 1999 to 2018).

Table 6Keywords for study selection

	Keywords
AND	"breast cancer"
AND	"counseling" OR "peer counseling" OR "one-on-one counseling" OR "counseling by peer" OR "group meeting" OR "group counseling" OR "group support" OR "peer group meeting" OR "peer group counseling" OR "peer group support" OR "telephone counseling" OR "telephone support" OR "peer telephone counseling" OR "peer telephone support"
AND	"anxiety" OR "depression" OR "quality of life"
AND	"chemotherapy"

The selection of articles was done by the following steps: (1) title, (2) abstract and (3) full text. Inclusion criteria were defined before the search (Table 7).

Table 7Inclusion criteria for study selection

Population	"Breast Cancer Patients"
Intervention	"Peer Counseling" OR "Peer Group Support" OR "Peer Group Meeting" OR "Peer Support by Telephone"
Outcome	"Anxiety" OR "Depression" OR "Quality of Life"

.

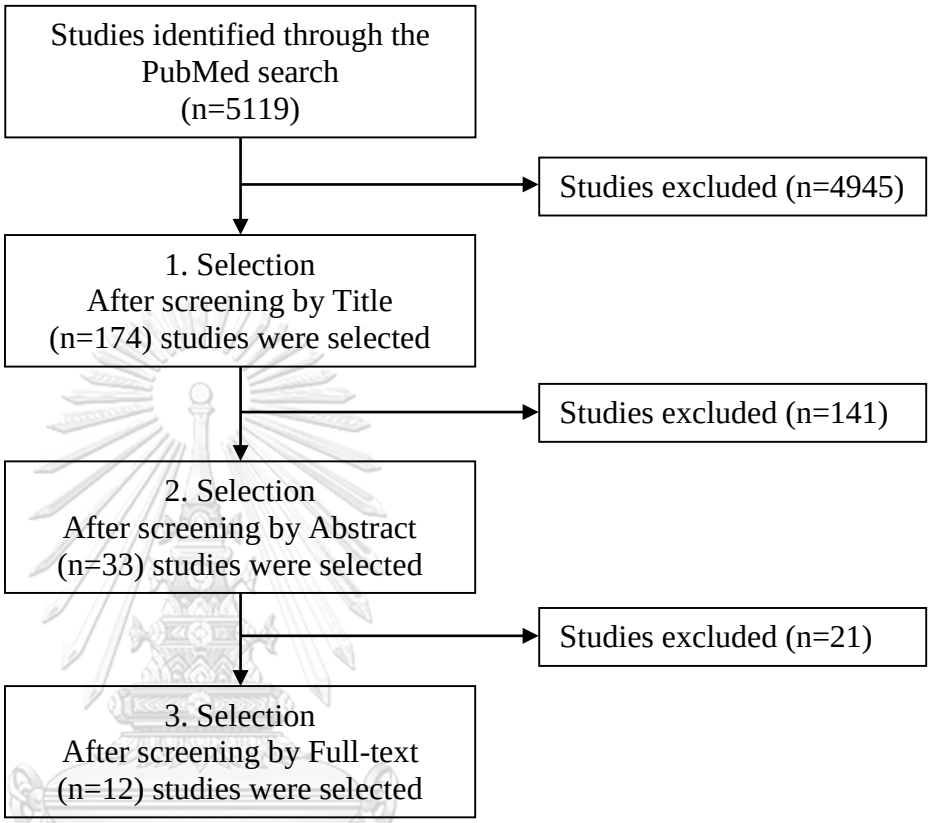


Figure 1Studies Selection Flowchart through PubMed

By selecting studies through PubMed by using the above keywords and study selection criteria, 12 studies were identified. Five studies were conducted in high-income countries and 7 in Asian countries.

2.4 Previous Cross-sectional Studies in Myanmar

A cross-sectional comparative study was done in Yangon, Myanmar in 2011. In that study, anxiety state of 150 cancer patients (Ca Cervix = 36, Ca Lungs = 15, Ca Breast = 18, Oro-pharyngeal Ca = 33, Abdominal Ca = 24 and others = 24) were assessed in the oncology ward. That study revealed that all breast cancer patients (n=18) suffered from clinical anxiety. When analyzed for all participants (n=150), that study reported that female cancer patients suffered from clinical anxiety 3 times more than male cancer patients. The longer the duration of illness, the less likely to decrease the clinical anxiety of cancer patients. There was no significant association between age, race, marital status, education, employment status, income, family size, having a caregiver and an anxiety state (Oo, 2011).

A cross-sectional descriptive study was done in Yangon, Myanmar in 2010. In that study, depression state and possible causative risk factors in 160 cancer patients were assessed in the oncology wards of 2 hospitals. In that study, depression was more common in divorced and widow groups of cancer patients than married patients and it was significant. There was also a significant association between duration of disease and depression status of the patients. The study also reported that a lack of family support was a strong indicator of depression among the participants. Moreover, the longer the duration of disease, the more chance to develop depression. There was no significant association between age, sex, education, occupation and depression status of the participants (Aung, 2010).

A cross-sectional descriptive study was done in Yangon, Myanmar in 2016. In that study, quality of life (QOL) scores were assessed among 200 breast cancer patients who were on radiotherapy in the hospital. In that study, participants scored fairly well on the global health status/QOL scale (mean=66.08, SD=21.19). The divorced group of patients scored less in emotional functioning which was significant. Participants who had disease duration of less than 1 year scored higher in global health status and those who had disease duration of more than 3 years scored less in cognitive functioning which was significant. Participants who were divorced scored least in insomnia symptom scale, widowed scored higher in diarrhea symptom scale and married scored

higher in financial difficulty scale, which was significant. Participants who were illiterate and can read and write scores lesser in nausea and vomiting symptom scales and those who were illiterate scored higher in financial difficulty scales having significant mean differences. Participants who earned less than 100,000 Kyats per month scored least in dyspnea symptom scale and those who had family members of less than 3 scored lesser in nausea and vomiting symptom scales with significant mean differences. Participants who had disease duration of less than 1 year scored lesser in appetite loss symptom scale and financial difficulty scale, and those had co-morbidity scored higher in diarrhea symptom scale with significant mean differences. Younger participants scored lesser in body image functional scale and older participants scored higher in future perspective functional scale with significant mean differences. Participants who were illiterate, can read and write, and passed primary school scored higher in body image functional scale. Participants who earned less than 100,000 Kyats per month also scored high in body image functional scale with a significant mean difference. Younger participants scored higher, those who can read and write and passed the primary school and those who earned less than 100,000 Kyats per month scored lesser in an upset by hair loss symptom scale with significant mean differences. Participants with co-morbidity scored higher in treatment side-effects with a significant mean difference. In multivariate analysis, participants with disease duration of 1-4 years were likely to be affected HRQOL for 2.17 times and more than 5 years were 3.33 times than those with a duration of less than 1 year. Participants with cancer stage 3 were more likely to be affected HRQOL for 3.07 times than stage 1. Moreover, upset by hair loss is a minor influencing factor for HRQOL of breast cancer survivors (Htet, 2016).

2.5 Predisposing Factors

2.5.1 BMI

Increasing body weight can lead to an increased risk of breast cancer after menopause. Before menopause, estrogen is produced mainly by ovaries, some are from fat tissue. After menopause, estrogen is produced mainly from fat tissue. Therefore, increased fat tissue can increase the level of estrogen and increase the risk of breast cancer. Moreover, in women, overweight is also associated with increased insulin levels in the blood. Increased insulin level is also associated with breast cancer (Society, 2017). Higher BMI is also associated with low quality of life in breast cancer patients (Sura et al., 2013).

Hence, in this study, the BMI of the participants was measured as one of the predisposing factors.

2.5.2 Age

Quality of life (QOL) scores were assessed among 348 female breast cancer patients who were on chemotherapy by a cross-sectional descriptive study in Kuwait in 2008. That study reported that older patients tended to have better functioning (emotional functioning, cognitive functioning, social functioning, sexual enjoyment, body image, and sexual functioning) and less intense symptoms (systemic side effects, breast symptoms, arm symptoms, upset by hair loss) than the younger patients. Moreover, age was a significant covariate for sexual functioning ($P < 0.02$) (Alawadi and Ohaeri, 2009).

A cross-sectional descriptive study regarding anxiety, depression, and quality of life of breast cancer patients was done in Lebanon in 2016. In that study, 150 breast cancer patients participated. That study revealed that patients diagnosed before the age of 50 had significantly lower breast cancer subscale scores compared to those diagnosed above age 50 (Akel et al., 2017).

But the dissimilar result was found in a cross-sectional descriptive study which was done in China in 2013. In that study, determinants of quality of life scores were assessed among 1,160 breast cancer patients. That study revealed that participants less

than 55 years of age had a better quality of life score than those older than 55 years of age and it was statistically significant (Yan et al., 2016).

Anxiety, depressive symptoms and quality of life (QOL) scores were assessed among 335 female breast cancer patients by a cross-sectional descriptive study in the USA. That study reported that the age of the participants distinguished among the anxiety and depression groups. Patients with Higher Anxiety and Subsydromal Depression were younger than women with neither symptom (Gold et al., 2016).

According to the above studies, the quality of life of breast cancer patients is associated with age but contradictory results were found among studies. Anxiety and depression are related to a younger age.

2.5.3 Ethnicity

Anxiety, depressive symptoms and quality of life (QOL) scores were assessed among 335 female breast cancer patients by a cross-sectional descriptive study in the USA. That study reported that the ethnicity of the participants distinguished among the anxiety and depression groups. Compared to the Lower Anxiety and Resilient group, a higher percentage of Non-white women were in the Higher Anxiety and Resilient and Higher Anxiety and Subsyndromal groups than White women (Gold et al., 2016).

A cross-sectional descriptive study was done in the USA in 2007. In that study, quality of life scores was assessed among 2,268 breast cancer patients. The participants had the following racial/ethnic distribution: white, African American, Latinas-high and Latinas-low (12.6%). That study revealed that all racial/ethnic minority groups reported lower physical well-being relative to white women for unadjusted mean QOL scores by race/ethnicity. African American women reported significantly lower functional well-being but higher emotional well-being than whites. Latinas-high also reported more breast concerns than whites. Latinas-low had significantly ($p<0.001$) worse scores than white women for physical well-being, functional well-being, emotional well-being, social well-being, and breast concerns. In the final model, Latinas-low had significantly lower QOL scores than white women for functional well-being, emotional well-being, and breast concerns (all p values <0.05), with physical well-being becoming marginally significant ($p=0.053$). African American women had significantly better emotional well-being than white women. Latinas-low were more likely to report lower levels of

functional and emotional well-being and more breast concerns as compared to Latinas-high and African American women, adjusting for all factors (Janz et al., 2009).

According to the above studies, the quality of life of breast cancer patients is also associated with the ethnicity of patients.

2.5.4 Marital Status

Quality of life (QOL) scores were assessed among 348 female breast cancer patients who were on chemotherapy by a cross-sectional descriptive study in Kuwait in 2008. That study reported that marital status was a significant covariate for sexual enjoyment ($P < 0.02$) (Alawadi and Ohaeri, 2009).

A cross-sectional descriptive study was done in Korea in 2009. In that study, altered appearance distress, body image and quality of life scores were assessed among 126 breast cancer patients in 16 hospitals. That study found that patients living without a partner had poorer quality of life than patients living with a partner or married and it was statistically significant (Chang et al., 2014).

According to the above studies, the quality of life of breast cancer patients is associated with marital status and patients who are living with a partner have a better quality of life.

2.5.5 Education

A cross-sectional descriptive study was done in Korea in 2009. In that study, altered appearance distress, body image and quality of life scores were assessed among 126 breast cancer patients in 16 hospitals. That study found that patients with less than middle school education reported a much lower quality of life compared to patients with more than high school education (Chang et al., 2014).

A cross-sectional descriptive study was done in China in 2013. In that study, determinants of quality of life scores were assessed among 1,160 breast cancer patients. That study revealed that participants of primary school or less group had lower quality of life score than those of middle school and high school group and college and above group and it was statistically significant (Yan et al., 2016).

A cross-sectional descriptive study regarding anxiety, depression, and quality of life of breast cancer patients was done in Lebanon in 2016. In that study, 150 breast

cancer patients participated. That study revealed that patients who had only completed a primary level of education or below had significantly higher anxiety and depression scores compared to those who completed secondary or university levels (Akel et al., 2017).

According to the above studies, the quality of life of breast cancer patients is associated with education and patients who have low educational status have a lower quality of life and higher anxiety and depression scores.

2.5.6 Number of Children

Women who gave birth to the first child after the age of 30 or who do not have a child may increase the risk of breast cancer. Giving birth to a child during early age or having many children may reduce the risk of breast cancer. However, some studies revealed that pregnancy was related to an increased risk of triple-negative breast cancer (Society, 2017).

A study of Zainal, N. Z., et al, 2013, which was a systematic review stated that more children at home were significantly associated with depression in breast cancer patients (Zainal et al., 2013).

Therefore, in this study, the number of children of the participants was asked as one of the predisposing factors.

2.5.7 Employment Status

A cross-sectional descriptive study regarding the quality of life of breast cancer patients was done among 119 breast cancer patients admitted and treated in a chemotherapy ward in Iran in 2006. That study reported that occupational status was associated with the global health status of Quality of life, and employed women had better QOL (Safaee et al., 2008).

A cross-sectional descriptive study was done in China in 2013. In that study, determinants of quality of life scores were assessed among 1,160 breast cancer patients. That study revealed that participants of farmers and the unemployed group had lower quality of life scores than any other groups of employment and it was statistically significant (Yan et al., 2016).

According to the above studies, the quality of life of breast cancer patients is associated with employment status and employed patients have a better quality of life.

2.5.8 Menopausal Status

A cross-sectional descriptive study was done in Brazil in 2003. In that study, associated factors of quality of life scores were assessed among 75 breast cancer patients. In that study, post-menopause was defined by at least 12 months of amenorrhea. By multiple regression analysis, that study revealed that postmenopausal status was negatively associated with the physical component of QOL ($p < 0.01$). Post-menopause was one of the factors that causing QOL impairment (Conde et al., 2005).

The different result was found in another cross-sectional descriptive study regarding the quality of life of breast cancer patients which was done among 119 breast cancer patients admitted and treated in a chemotherapy ward in Iran in 2006. That study reported that, in regression analyses, menopausal status was statistically significant in predicting patients' QOL. Postmenopausal women had better QOL (Safaee et al., 2008).

According to the above studies, the quality of life of breast cancer patients is associated with the menopausal status of the patients but controvert results were found among studies.

2.5.9 Smoking

Some studies revealed the association between smoking and breast cancer, but some studies suggested contrary results. The link between secondhand smoking and the risk of breast cancer is also not strong (Society, 2017). Smoking may lead to increased anxiety and anxiety may also increase smoking rates (Moylan et al., 2013). Major depression is also associated with higher rates of cigarette smoking and nicotine dependence (Fergusson et al., 2003).

Therefore, the smoking history of the participants was assessed as one of the predisposing factors in this study.

2.5.10 Alcohol Consumption

Alcohol consumption is associated with increased breast cancer risk. The more amount of alcohol consumed, the higher the risk of getting breast cancer. Women who drink 2-3 units of alcohol per day have a higher risk of breast cancer about 20% when

compared with non-alcoholic women. Excessive drinking of alcohol is also associated with increased risk of other types of cancer (Society, 2017).

Therefore, the alcohol consumption history of the participants was assessed as one of the predisposing factors in this study.

2.6 Enabling Factors

2.6.1 Family Income

A cross-sectional descriptive study was done in Lagos, Nigeria. In that study, depression scores were assessed among 33 female breast cancer patients in the hospital. That study found that average monthly income significantly predicted depression. An individual's average income would determine how much would be available to pay for treatment and other associated costs (Akin-Odanye et al., 2011).

A cross-sectional descriptive study regarding anxiety, depression, and quality of life of breast cancer patients was done in Lebanon in 2016. In that study, 150 breast cancer patients participated. That study revealed that patients who had a household monthly income below 1,000$ exhibited significantly lower QOL scores. Moreover, participants with a household monthly income greater than 3,000$ had significantly higher physical well-being scores (Akel et al., 2017).

A cross-sectional descriptive study was done in China in 2013. In that study, determinants of quality of life scores were assessed among 1,160 breast cancer patients. That study revealed that participants of monthly household income <1,000 RMB had lower quality of life scores than those of higher-income groups and it was statistically significant (Yan et al., 2016).

According to the above studies, the quality of life of breast cancer patients is associated with family income and patients with low income have a lower quality of life and may have a higher score of depression.

2.6.2 Family History of Breast Cancer

The family history of breast cancer in close relatives increased the risk of getting breast cancer. History of breast cancer in first-degree relatives increases the risk to double. Moreover, the history of breast cancer in 2 first-degree relatives increases the risk to triple. Fewer than 15% of breast cancer patients have a family history of breast cancer (Society, 2017).

Therefore, in this study, the family history of breast cancer of the participants was assessed.

2.6.3 Family Relationship

A cross-sectional study was conducted in Thailand in 2007. In that study, 300 female breast cancer patients participated. They were 18 years and older and recruited at the surgical outpatient department. Among those patients, demographic characteristics, anxiety and depression status, social support relationship and functioning in their family and problem and conflict solving. That study revealed that anxiety and depression status of the breast cancer patients were significantly associated with relationship and functioning in their family (Lueboonthavatchai, 2007).

2.6.4 Social Support

A cross-sectional study was conducted in Thailand in 2007. In that study, 300 female breast cancer patients participated. They were 18 years and older and recruited at the surgical outpatient department. Among those patients, demographic characteristics, anxiety and depression status, social support relationship and functioning in their family and problem and conflict solving. That study revealed that anxiety and depression status of the breast cancer patients were significantly associated with social support that the participants received (Lueboonthavatchai, 2007).

In a study of Zainal, N. Z., et al, 2013, which was a systematic review stated that poor social support was significantly associated with depression in breast cancer patients (Zainal et al., 2013).

2.7 Need Factors

2.7.1 Duration of Disease

A cross-sectional descriptive study regarding the quality of life of breast cancer patients was done among 119 breast cancer patients admitted and treated in a chemotherapy ward in Iran in 2006. That study reported that the duration of disease was significantly related to the QOL score of patients. In other words, those with the duration of disease less than four months reported significantly lesser global health status of the QOL score (Safaee et al., 2008).

A cross-sectional descriptive study was done in Yemen in 2011. In that study, quality of life scores was assessed among 106 female breast cancer patients at the out-patient department of the oncology center. That study found that women in the category > 2 years after diagnosis had an average of 10.5 points lower compared to those women in the other category. This means that those women in the category 1-2 years had higher scores of total QOL than women in the other category (Al-Naggar et al., 2011).

According to the above studies, the quality of life of breast cancer patients is associated with the duration of disease but the results are not clear enough to make a conclusion.

2.7.2 Number of Hospitalization

A cross-sectional study was conducted in Thailand in 2007. In that study, 300 female breast cancer patients participated. They were 18 years and older and recruited at the surgical outpatient department. Among those patients, demographic characteristics, anxiety and depression status, social support relationship and functioning in their family and problem and conflict solving. That study revealed that anxiety and depression status of breast cancer patients were significantly associated with the number of hospitalization of the participants (Lueboonthavatchai, 2007).

2.7.3 Clinical Staging

Quality of life (QOL) scores were assessed among 348 female breast cancer patients who were on chemotherapy by a cross-sectional descriptive study in Kuwait in 2008. That study reported that participants with advanced disease tended to have worse functioning: role functioning (stage IV < stage II, $P < 0.01$), diarrhea (stage IV < stages

I & II, P = 0.02), and future perspectives (stage III < stages I & II, P = 0.02) (Alawadi and Ohaeri, 2009).

A cross-sectional descriptive study regarding anxiety, depression, and quality of life of breast cancer patients was done in Lebanon in 2016. In that study, 150 breast cancer patients participated. That study revealed that patients who had stage IV disease at diagnosis exhibited significantly lower QOL score (Akel et al., 2017)

A cross-sectional descriptive study was done in Lagos, Nigeria. In that study, depression scores were assessed among 33 female breast cancer patients in the hospital. That study found that the cancer stage predicted depression and advanced disease was a risk factor for depression (Akin-Odanye et al., 2011).

According to the above studies, the quality of life of breast cancer patients is associated with clinical staging of the disease and patients with advanced clinical staging have a lower quality of life. The advanced stage of the disease can be predicted to be a risk factor for depression.

2.7.4 Received Treatment

Quality of life (QOL) scores were assessed among 348 female breast cancer patients who were on chemotherapy by a cross-sectional descriptive study in Kuwait in 2008. That study reported that participants who had surgery had significantly fewer complaints about diarrhea (P = 0.005), but more breast symptoms (P < 0.04). Participants who received radiotherapy had significantly more problems with fatigue (P = 0.03), breast symptoms (P = 0.04), arm symptoms (P = 0.02), and future perspectives (P = 0.02) (Alawadi and Ohaeri, 2009).

A cross-sectional descriptive study regarding anxiety, depression, and quality of life of breast cancer patients was done in Lebanon in 2016. In that study, 150 breast cancer patients participated. That study revealed that patients who had received chemotherapy exhibited significantly lower QOL scores. Moreover, patients who underwent chemotherapy or radiotherapy as part of their treatment regimen had lower physical well-being and breast cancer subscale scores compared to their counterparts. Patients who underwent surgery had significantly higher functional well-being scores than those who did not (Akel et al., 2017).

According to the above studies, the quality of life of breast cancer patients is associated with received treatment. Treatment for breast cancer may have an effect on the quality of life of the patients, especially on symptom scales.

2.7.5 Co-morbidity

A hospital-based cross-sectional study was conducted in Korea to evaluate health-related quality of life in 152 women with recurrent breast cancer in 2004. In that study, health-related quality of life (HRQOL) was assessed by EORTC QLQ-C30 and QLQ-BR23 questionnaires. Comorbidity was categorized as present or absent. That study reported that the absence of comorbidity was a factor that positively related to overall QOL (Lee et al., 2007).

A longitudinal study was done among 195 breast cancer survivors to identify factors affecting the level and rate of change in the quality of life after completion of treatment in the USA. In that study, participants were interviewed up to four times at approximately yearly intervals. That study revealed that the presence of comorbidity significantly lowered a woman's quality of well-being (QWB) at whatever time point the health problem occurred ($p = 0.036$) but the rate of change in QWB over time for women with comorbidity did not differ significantly from women without comorbidity ($p = 0.858$) (Vacek et al., 2003).

A cross-sectional descriptive study was done in the USA in 2007. In that study, quality of life scores was assessed among 2,268 breast cancer patients. That study revealed that the presence of other comorbidities (≥1) resulted in lower levels of QOL across all domains except emotional well-being (Janz et al., 2009).

According to the above studies, the quality of life of breast cancer patients is associated with co-morbidity. Studies consistently showed that the presence of other co-morbidities resulted in lower levels of quality of life.

2.8 Proximal Outcomes

2.8.1 Knowledge

A health education intervention study was conducted among lung cancer patients in China in 2010. There were 62 participants in the intervention group and 110 participants in the control group. That study found that education intervention was effective in lowering the depression prevalence, lowering side effects from chemotherapy and improving performance status among the participants (Tian et al., 2015).

A literature review concluded that health education programs were effective to improve the knowledge of cancer patients. That study also suggested that cancer patients should have the chance of asking questions during the treatment period. That study also found that the cancer patients wanted to study as much as possible about their disease, treatment for it and management for the side effects (Valenti, 2014).

2.8.2 Self-efficacy

A health education intervention study was done among adult women in Iran in 2015. There were 116 participants in the intervention group and 110 participants in the control group. That study found that education intervention was significantly effective in increasing awareness, improving self-efficacy and decreasing perceived barriers among the participants of the intervention group compared to the control group (Masoudiyekta et al., 2018).

2.8.3 Empathy

An interventional study that applied online support group intervention among breast cancer patients was conducted in the USA in 2003. There were 177 participants in that study. That study revealed that online support group intervention was significantly effective in improving empathy among the participants after the intervention period (Han et al., 2011).

2.8.4 Consumer Satisfaction

When the role of peer facilitator was evaluated, three types of outcome data were generally identified: workload indicators (such as the number of support session or phone call), indicators of patient/client satisfaction (such as meeting patient

expectations) and indicators of more systemic evaluation issues (such as measures of cost-effectiveness) (Till, 2003).

An interventional study that tested a brief nurse-delivered intervention including face-to-face and telephone support to address the needs of women with advanced breast cancer in Australia. There were 30 participants in the intervention group and 30 participants in the control group. That study assessed the quality of life and supportive care needs of the participants. That study found that nurse-delivered support intervention was significantly effective in reducing the psychological and emotional needs of those with high initial needs among the participants of the intervention group compared to the control group (Aranda et al., 2006).

2.9 Distal Outcomes

2.9.1 Anxiety

A prospective cohort study regarding anxiety, depression, and quality of life of breast cancer patients was done in Malaysia in 2011. In that study, 221 female breast cancer patients participated. They were recruited at the time of diagnosis of breast cancer. Data were collected at 3-time points; baseline, 6 months and 12 months. Anxiety was measured with the Hospital Anxiety and Depression Scale (HADS). That study revealed that there was a significant reduction in anxiety at 6 and 12 months as compared to baseline (Baseline – 6 months, $p = 0.002$; Baseline - 12 months, $p < 0.001$) (Ng et al., 2015).

A prospective study was conducted to assess the long-term impact of attending a peer support group on anxiety and depression of breast cancer patients before and after 1-year participation in the monthly support group meeting in Iran. In that study, both quantitative and qualitative assessments were done. All current members of the three Iranian breast cancer support groups (n=56) participated in that study. Hospital Anxiety and Depression Scale (HADS) was used to assess the anxiety state of the participants. Comparing anxiety at baseline and follow-up, anxiety scores were significantly reduced (P=0.03) after 1-year participation in the support group. Analysis of the qualitative data indicated that group involvement was the most important factor

that contributed to the patients' improved psychological well-being. The findings of this prospective study suggest that participation in cancer support groups could have a long-term effect on reducing anxiety in breast cancer patients (Montazeri et al., 2001).

Another interventional study to evaluate the effect of the multidiscipline mentor-based program on breast cancer patients was conducted in China. There were 93 participants in the intervention group and 82 in the control group. The participants of the intervention group received peer mentoring by peer mentors, education by professionals and small group discussion. The intervention was delivered 8 weekly sessions in the first 2 months, as well as 3 sessions at 2 months, 6 months and 12 months after the intervention. Assessments were done at baseline (T1), 2 months (T2), 6 months (T3) and 12 months (T4) after the intervention. As a result, at T3, the intervention group showed significantly lowered anxiety scores compared to the control group (Ye et al., 2016).

In the study of Lee, R., et al, 2013 in Korea, 85 newly diagnosed breast cancer patients (39 in the intervention group and 46 in the control group) participated. The intervention group received peer group support intervention by dyadic pair, once a week for 6 weeks, face-to-face or by telephone. After the intervention, anxiety scores showed no change in the intervention group (Lee et al., 2013).

An interventional study to evaluate the effect of Culturally Tailored Peer-Mentoring and Education Intervention on anxiety and depression of breast cancer patients was conducted in the USA. There were 14 participants in the intervention group. The participants received peer mentoring by peer mentors and education by specialists, 10 sessions which were conducted weekly. After the intervention, anxiety scores revealed no change among the participants (Lu et al., 2014).

According to the above studies, while some studies reveal a significant effect of peer support intervention on anxiety state of breast cancer patients, some studies show no change in anxiety scores of participants. In this study, the effect of peer support multi-component intervention on anxiety state of breast cancer patients was tested.

2.9.2 Depression

A prospective cohort study regarding anxiety, depression, and quality of life of breast cancer patients was done in Malaysia in 2011. In that study, 221 female breast cancer patients participated. They were recruited at the time of diagnosis of breast cancer. Data were collected at 3-time points; baseline, 6 months and 12 months. Depression was measured with the Hospital Anxiety and Depression Scale (HADS). That study revealed that depression is relatively low and does not change significantly at both 6 months and 12 months' time point (Baseline - 6 months, $p = 0.932$; Baseline - 12 months, $p = 0.428$) (Ng et al., 2015).

A prospective study was conducted to assess the long-term impact of attending a peer support group on anxiety and depression of breast cancer patients before and after 1-year participation in the monthly support group meeting in Iran. In that study, both quantitative and qualitative assessments were done. All current members of the three Iranian breast cancer support groups (n=56) participated in that study. Hospital Anxiety and Depression Scale (HADS) was used to assess the depression state of the participants. Comparing depression at baseline and follow-up, depression scores were significantly reduced (P=0.008) after 1-year participation in the support group. Analysis of the qualitative data indicated that group involvement was the most important factor that contributed to the patients' improved psychological well-being. The findings of this prospective study suggest that participation in cancer support groups could have a long-term effect on reducing depression in breast cancer patients (Montazeri et al., 2001).

An interventional study to evaluate the effect of Culturally Tailored Peer-Mentoring and Education Intervention on anxiety and depression of breast cancer patients was conducted in the USA. There were 14 participants in the intervention group. The participants received peer mentoring by peer mentors and education by specialists, 10 weekly sessions. After the intervention, depression scores were significantly decreased among the participants (Lu et al., 2014).

Another interventional study to evaluate the effect of the multidiscipline mentor-based program on breast cancer patients was conducted in China. There were 93 participants in the intervention group and 82 in the control group. The participants of the intervention group received peer mentoring by peer mentors, education by

professionals and small group discussion. The intervention was delivered 8 weekly sessions in the first 2 months, as well as 3 sessions at 2 months, 6 months and 12 months after the intervention. Assessments were done at baseline (T1), 2 months (T2), 6 months (T3) and 12 months (T4) after the intervention. As a result, at T2, the intervention group showed significantly lowered depression scores compared to the control group (Ye et al., 2016).

In the study of Gotay, C. C., et al, 2007 in the USA, 305 first recurrence breast cancer patients (152 in the intervention group and 153 in the control group) participated. The intervention group received telephone support by trained peer counselors, 4-8 phone calls over 1 month. Three months after the baseline assessment, psychosocial distress and depressive symptoms showed no improvement in both the intervention group and the control group (Gotay et al., 2007).

In the study of Lee, R., et al, 2013 in Korea, 85 newly diagnosed breast cancer patients (39 in the intervention group and 46 in the control group) participated. The intervention group received peer group support intervention by dyadic pair, once a week for 6 weeks, face-to-face or by telephone. After the intervention, depression scores showed no change in the intervention group (Lee et al., 2013).

According to the above studies, while some studies reveal a significant effect of peer support intervention on depression state of breast cancer patients, some studies show no change in depression scores of participants. In this study, the effect of peer support multi-component intervention on depression state of breast cancer patients was tested.

2.9.3 Quality of Life

A prospective cohort study regarding anxiety, depression, and quality of life of breast cancer patients was done in Malaysia in 2011. In that study, 221 female breast cancer patients participated. They were recruited at the time of diagnosis of breast cancer. Data were collected at 3-time points; baseline, 6 months and 12 months. Quality of Life was measured with EORTC QLQ-C30 and QLQ-BR23 questionnaires. That study revealed that there was an improvement in the global health status/QoL at 12 months as compared to baseline (Baseline - 12 months, $p = 0.015$) with no significant change at 6 months (Baseline - 6 months, $p > 0.05$). Among the five functioning scales,

physical functioning shows significant improvement at 6 months (Baseline – 6 months, $p = 0.001$) and social functioning improves at 12 months (Baseline – 12 months, $p = 0.03$). There is significant improvement in emotional functioning at both 6 and 12 months (Baseline – 6 months, $p = 0.002$; Baseline - 12 months, $p < 0.001$). There are no significant changes in the other two functioning scales, namely, role and cognitive (Ng et al., 2015).

Quality of life (QOL) scores were assessed among 112 female breast cancer patients who completed active treatment for 1 to 3 years by a cross-sectional descriptive study in Brazil in 2014. Among them, 85 women were treated with chemotherapy, surgery, and radiotherapy; the other 27 women were treated with surgery and radiotherapy, with or without hormone therapy, but no chemotherapy. That study reported that that women who received treatment for breast cancer had diminished scores in all domains of QOL by SF-36 questionnaire, especially in the Role-Physical, Bodily Pain, and Role-Emotional domains. In addition, among treated women, those who received chemotherapy had lower QOL scores in the Physical Functioning and Role-Physical domains than did those who did not receive chemotherapy (Tiezzi et al., 2017).

An interventional study regarding the quality of life of newly diagnosed breast cancer patients was conducted in the USA in 2006. There were 52 participants in the intervention group and 52 in the control group. Both groups received a consultation with an oncology nurse for all participants provided information and answered questions regarding treatment choices, side effects, clinical trials, and medical and/or community resources. The intervention group received peer support for 6 months by trained and supervised peer navigators. The participant and peer navigator met weekly by telephone, e-mail, or in person. Assessments were done at baseline, 3 months, 6 months and 12 months. That study reported that quality of life scores of the participants of the intervention group significantly improved (FACT-BSW, group x time; P=0.01) compared with the participants of the control group (moderate effect size: Cohen's d = 0.41) (Giese-Davis et al., 2016).

Another interventional study to find the effect of peer education group meetings and peer support group meetings among breast cancer patients was done in the USA.

There were 88 participants in the intervention group and 85 in the control group. Among the participants of the intervention group, 58 breast cancer patients of Stage I or II received education intervention and all participants (n=88) received a peer support group meeting which was held once a week for 8 weeks. Assessments were done at baseline, 1-2 weeks after the group meetings ended, and 6 months later. That study revealed that peer support interventions have positive short-term effects on well-being, among women with late and early-stage breast cancer, and these effects are partially mediated by changes in life purpose. Education interventions have positive short-term effects on well-being among women with early-stage breast cancer (Mens et al., 2016).

An interventional study to evaluate the effect of peer-led education on the quality of life of breast cancer patients was conducted in Iran. There were 49 participants in the intervention group and 50 in the control group. The intervention group received a peer-led education intervention weekly for 1 month by trained peer educators. Assessments were done before, immediate and 2 months after the intervention. That study reported that global health status was significantly improved in the intervention group after the intervention compared to the control group. Moreover, functional scales (role, emotional cognitive and social) were improved significantly except physical function in the intervention group. Regarding symptom scales, fatigue insomnia, pain, and loss of appetite revealed a significant decline in the intervention group. All breast cancer-specific functional scores were also increased in the interventional group. All breast cancer-specific symptom scales except arm symptom improved significantly in the intervention group compared to the control group after the intervention. Time was a significant factor for changes in that study (Sharif et al., 2010).

Consistent results were also revealed in the following interventional studies. In the study of Cho, O., Yoo, Y., & Kim, N., 2006 in South Korea, 55 breast cancer patients (28 in the intervention group and 27 in the control group) participated. The intervention group received psychology-based education by a specialist once per week for 10 weeks, exercise sessions twice per week for 10 weeks and peer support group activity once per week for 10 weeks. After the intervention period, significantly

improved QOL scores were resulted among the intervention group compared to the control group (Cho et al., 2006).

In the study of Tehrani, A. M., et al, 2011 in Iran, 61 breast cancer patients (30 in the intervention group and 31 in the control group) participated. The intervention group received peer-led meetings twice monthly for 3 months. The Control group received 6 education sessions by a specialist. After the intervention period, 5 out of 8 sub-scales of QOL scores (physical, vitality, social functioning, emotional and mental health) significantly improved among the intervention group compared to the control group (Tehrani et al., 2011).

In the study of Taleghani, F., et al, 2012 in Iran, 100 breast cancer patients (50 in the intervention group and 50 in the control group) participated. The intervention group received face-to-face contacts or telephone contacts with the peer group during the treatment (chemotherapy and radiotherapy) and after completing the treatment. After the intervention period, QOL scores of the intervention group significantly improved compared to the control group (Taleghani et al., 2012).

In the study of Napoles, A. M., et al, 2015 in the USA, 151 breast cancer patients (76 in the intervention group and 75 in the control group) participated. The intervention group received peer-delivered community-based stress management intervention, once a week for 8 weeks, face-to-face at home. After the intervention period, QOL scores were assessed at baseline, 3 months and 6 months. For those assessments, QOL scores of the intervention group significantly improved compared to the control group (Napoles et al., 2015).

According to the above studies, these studies consistently revealed a significant effect of peer support intervention on the quality of life of breast cancer patients. In this study, the effect of peer support multi-component intervention on the quality of life of breast cancer patients was tested.

2.10 Counseling

Counseling is a method of helping people, but it is a modified method that includes the utilization of specific verbal, non-verbal and relationship skills to assist change so that the person seeking help can feel better and find new means of thinking and behaving.

People always deal with upsetting periods in their lives in their particular means. Some people can adapt easily and can solve their psychological difficulties by seeing things through on their own. Other people may have chat with a companion, family member or friend. Though, there are many people who don't have anyone to have chat about personal problems or who want to solve their problems by talking to a counselor rather than someone who is familiar with them well. Sometimes, it may be easier for a person to have chat with a counselor about very personal problems than to risk hurting a connection by revealing close personal information to someone who is familiar with them well. There are many explanations why people might need counseling because they have experienced a physical or psychological problem, being bothered by disease, or having grieved several types of loss. When they come for counseling, people assume that they will be able to have a chat with someone else in confidence about their difficulties with the expectation of discovering answers and feeling better.

Counseling to have occurred, the person seeking help will have to talk about the problems that are making them trouble and this will comprise self-revealing information that may not have been told with anyone else. When reliance improves in a counseling connection, the person seeking help can expose friendly and vulnerable levels of self-disclosure. Because counseling includes self-disclosure, the relationship is important to the counseling process.

Good counseling relationships purposely develop interaction between the person seeking help and the counselor by forming an atmosphere of security. It is vital to respect a person's need or desire for confidentiality and to give time for them to self-revealing at a step that is appropriate for them. Counseling includes a distinct type of connection between the counselor and the person seeking help. Sometimes the

connection is a face-to-face connection and sometimes it is delivered by phone. In the recent internet world, this could be done electronically.

A chief goal of the counseling process is to assist people to change. The persons seeking help have to be able to do changes in the manner they think and the approach they do so that they are not possible to repeat patterns of thinking and behaving which can develop negative results for them.

Counselors usually will not provide advice. People will feel better just because they have had a chance to share their difficulties with another person who is trained to listen. This is the most important method in which a counselor can see the needs of the person, by listening. Furthermore, if a person can find themselves, during a counseling period, better means of thinking about, replying to, dealing with, and handling the conditions and problems that make them trouble, then they are probable to feel better. They are also probable to feel content with the result, even though they may not have got any guidance.

The interest of both the person seeking help and the counselor is to endorse continuing long-term change, rather than to occupy in short-term problem-solving. It is important, if counselors feel satisfied with their work, that the person seeking help can alter and develop in such a way that they acquire to handle, as much as is accurately possible, on their own without pursuing more counseling each time a new difficulty ascends.

An important aim for a counselor is to help a person to find themselves how to become more self-confident and how to feel self-assured about their capacity for making decisions. In the long-term, it is not supportive of anyone to become in need of advice from a counselor. It is far well for them to be self-confident, and capable of creating and believing their own decisions.

2.10.1 Desirable counselor qualities when using an integrative approach

For an operative counseling rapport to be attained, counselors applying an integrative method should attempt to be congruent, empathic, warm and sensitive with a good rapport, non-judgmental with unconditional positive regard and attentive, understanding and supportive.

An effective counselor more listens than talks, and what they talk provides the person seeking help a sense of being picked up and understood. The role of the counselor includes serving the person seeking help to discover their world and thus to make sense out of their inner misperception. It is not the counselor's role to walk in the direction in which a person goes, but rather to offer the atmosphere in which they can best choose where to go. The counselor goes together with them on their trip of discovering, working cooperatively with them by decisively creating the use of counseling skills within a process that helps change.

Counselors have to know their views and values so that they can respect the values of the person seeking help and they are not confused during counseling by trying to reform their values. Counselors are not to try to impose their views or values on the person seeking help.

All counselors have an ethical concern to have regular supervision from a trained and experienced supervisor who is also a counselor. This is a necessity not only during the training period but also throughout the professional career of the counselor. Whenever a value conflict develops with counseling work, it is important to discuss with the supervisor about the problems involved. By doing this trained counselors will decrease the possibilities of future situations where the effectiveness of the counseling might be negatively affected by the particular value in the question.

2.10.2 Learning Foundation Skills

The counseling process is also dependent on the utilization of several individual counseling skills. A new counselor has to become proficient in the use of these because when used properly they greatly improve the quality and success of the counseling process. When conversational skills of counselors are evaluated, the result will reveal that small component of valuable verbal counseling behavior. These can be defined as counseling micro-skills.

Joining and Listening

The environment of the connection is established right from the start and it is very important. The counselor has to try to meet the person seeking counseling in a person-to-person meeting where the counselor is not unapproachable, is neither

superior nor inferior, but is friendly, open and informal. The counselor can collect a lot of information such as the manner they are sitting or standing, their non-verbal actions and the dresses they are wearing, without any question. By doing so, the counselor can pick up something about the person seeking help how they see themselves, and how they want to be seen. Moreover, the counselor can gradually make an image of their world and of their vision of that world.

The counselor has to start to create a connection and put the person at comfort before going forward on problems. The person will be invited to discuss their problems. It is helpful to invite in empowering an anxious person to start to talk. When they begin to talk it is important that they have to know you are listening and picking up to what they are saying. As a helper, the counselor has to be careful to proclaim the right messages.

The counselor can assist the person seeking help to sort through their misperception by listening to what the person says, identify their problems, explore their choices, and conclude the counseling session feeling that something helpful has happened. The counselor, therefore, has to listen very carefully to everything that the person is saying and to recall, as much as possible, the particulars of the chat. Listening with interest includes the utilization of minimal responses, brief invitations to continue, non-verbal behavior, voice, and silence.

Reflection of Content (Paraphrasing)

Reflection of content or paraphrasing is a very valuable basic micro-skill. It can be viewed as a fundamental micro-skill because it is perfect to use in combination with any other micro-skills. To paraphrase the meaning of the person's saying, the counselor needs to listen carefully and to repeat it in the counselor's arguments. By doing so, the person feels that the counselor hears them and also becomes more fully attentive to what they are saying. Then they can enjoy the importance of what they are saying and to better reform their misperception.

Reflection of Feelings

Reflection of feelings is one of the most helpful micro-skills when used suitably at proper times in the counseling procedure. Reflection of feelings is similar to paraphrasing because it includes reflecting on the information of the person delivered by them. Though, it is different because it includes reflecting emotional feelings, whereas paraphrasing includes reflecting the information and feelings that build up the content of what they have said.

Reflection of Contents and Feelings

Furthermore, the counselor can combine reflection of content and reflection of feelings by reflecting both content and feeling in a single statement. It is often suitable to combine these two micro-skills. The statement should be short and not lengthy. A trusting connection has to be established which may enable the person to explore the most painful problems of their life, and so to go forward out of misperception.

Use and Abuse of Questions

Problems can be developed when asking pointless questions or when asking questions at incorrect times. There are two categories of questions: open questions and closed questions. Both are useful in counseling procedure and it is important to understand the difference between these two types of questions. Closed questions are questions that prime to a particular answer. Usually, the answer to a closed question is very little. The open question is different from the closed question. It provides the person being asked the question a lot of opportunities, permits them to explore any related area, and encourages them to freely reveal additional matters. It is commonly desirable to utilize open questions rather than closed questions. Closed questions are suitable when helping a person to be more detailed, or when certain information is needed.

Summarizing

Summarizing is a process that has to be done during a counseling procedure so that the person seeking help can simplify their concepts and combine the various components of what they are talking into a reasonable form. Especially, on the way to the end of the counseling period, it is often practical for the counselor to summarize the

main concerns that were discussed during the session. By doing so, the counselor draws together the views, concepts, and moods that were expressed during the counseling period, making the person feel less confused and to face their life condition.

Matching Language and Metaphor

For a counselor, it can be supportive to sit in a similar manner to the person seeking help, to have chat in the same manner and with the same tone of voice, and to match their breathing. By doing so, the person can feel of association with the counselor, and then they will feel relaxed, harmless, and able to share willingly.

The counselor can join the person seeking help in another means by utilizing a similar language to the language utilized by the person seeking help. If the person is using mainly ‘seeing’ language, then it can be beneficial for the counselor to utilize ‘seeing’ language too. Likewise, if the person is using ‘hearing’ language or ‘feeling’ language, it will be useful for the counselor to utilize the same language. By doing so, they are possible to improve the person-to-person connection. Matching a person’s chief mode and any metaphor utilized can benefit in the joining process.

Creating Comfortable Closure

It is equitably common for the counseling period to be 1 hour. When the session becomes near to finish, it is sometimes suitable for the counselor to deliver a summary of the discussed points during the discussion. The counselor might also add a statement regarding aims for the future and the likelihood of future counseling sessions being needed. During finishing time, it is helpful to provide some positive reactions, specifically as people usually seek help from a counselor at times when their self-confidence is low. When concluding a counseling session, no more questions or reflection of content or feelings are required. For those who need the next counseling session, it may be necessary for the counselor to discuss an ongoing agreement and make sure that they are welcome to make a new session.

2.11 Peer Group Support

Peer support groups are appreciated deals and means that bring together persons affected by a similar condition so they can find out solutions to solve shared difficulties and feel reinforced by others who have had similar experiences and who may know the situation of each other better. Peer support groups are facilitated by members for members so the main concerns are directly based on their requirements. Peer support groups also provide members to be beneficial from naturally occurring social support in the community forming unique interactions that may not otherwise have been possible (WHO, 2017b).

One-to-one peer support and internet and media-based peer support can also be as valuable as peer group support. Every person will not be able to or want to meet face-to-face, so telephone chatting, online discussions, the internet, and social media can be potential substitutions. Peer support facilities can be delivered by different organizations. Though, the significance of utilizing independent peer organizations to deliver services should be highlighted in terms of utilizing their distinctive capability to generate a place for people to join outside structured one-to-one or group supports. Through this community approach, people can create natural interactions with people of their choice in their environments (WHO, 2017b).

Peer support groups can be established on a formal type with paid peer group leaders trained by specialists or on an informal type with volunteer peer leaders. Peer leaders facilitate discussions in a group and take responsibility for the improvement and effectiveness of the group. They have to establish meetings, show up on time, open the discussion, provide leadership and listen to group members and arrange for an additional facilitator if they are not present. Peer leaders may have experienced, but they are not probable to have answers to all the questions that arise during group discussion (WHO, 2017b).

Depending on the aim of the group, the peer support group will have open or closed membership. Each type of group has advantages. Anyone who wants to partake can join with open membership. Members generally join and stop to join by their

desires. This type of membership permits people to join meetings whenever they want and facilitates people to receive peer support with short notice (WHO, 2017b).

For closed membership types, only people who have been acknowledged into the group are permitted to join meetings. People who want to join the group have to meet current members before the peer support group meeting to understand requirements and opportunities. This type of membership permits members to get to understand each other better over time, resulting in believing interactions and a safe atmosphere to share private experiences. For some group members, it can be supportive to have chat about the implication of the group as a unit and attendance of each other in the group. For some members, it could be imperative to know that their attendance is evocative and essential for the other members. Membership of a group can offer people with a sense of resolution and connectedness (WHO, 2017b).

It is helpful for members to know the contact person for joining the group, time of the meeting, duration of the meeting, venue of the meeting, ethics and ideologies, privacy, guidelines, a short explanation of the procedure of the group meetings and benefits of the meetings.

Formal peer support groups normally have more described roles and responsibilities, for example, a definite peer leader for each meeting. This structure can lead to more competent decision-making and operation of actions. Informal peer support groups usually have less hierarchy, permitting members to have changeable and lively roles. They can also let for more flexibility in development and applying actions (WHO, 2017b).

It is good to take a break during the meeting. Have foods and drinks, and allow people to move in the room. It will offer a chance for them to talk to each other, which is most beneficial for those who are difficult to talk in a group setting. It can also help in generating a more stress-free and relaxed environment where group members can interact on different means (WHO, 2017b).

Admiration for the confidentiality of other members within peer support groups is principally important. People often share personal stories and are often only able to do so after having established a trustworthy rapport with group members. It is very

important to respect this reliance and for group members to keep confidential to all information and stories shared during meetings (WHO, 2017b).

The benefits of peer group support are extensive and can embrace the establishment of a secure atmosphere to talk freely and share feelings and opinions about their recent condition and difficulties; sharing of information and understandings and getting knowledge from others in related circumstances that can helpful to offer thoughts and explanations to solve difficulties that group members are experiencing; the chance to shape new interactions and reinforce social support linkages which support to decrease loneliness and feelings of isolation; sharing of knowledge about existing community resources and useful support to support group members gain resources and support (WHO, 2017b).

2.12 Peer Support by Telephone

The methods of connecting to patients develop as technology evolves. This advantage can be used in the health care system in delivering education, information, and support by the telephone, internet and other methods (e.g., CDROM) to assist in the prevention and management of the disease. In addition to these health services, psychologists have improved psychotherapeutic interventions to integrate such technologies. Although there is a scarcity of study on the effectiveness of such psychosocial services in comparison with face-to-face interventions, researchers have started to study the effectiveness of these approaches. Telephone-based interventions have been engaged as a method of overwhelming barriers such as time limitations, transportation difficulties, caregiving duties, stigma concerns, disability, living in a remote area, to the old-style method of delivering management face-to-face (Nezu et al., 2012).

In addition to the resources obtainable to cancer patients, psychologists have adjusted psychotherapeutic interventions to a plan applicable through telephone. Many of these interventions have been established to identify problems in association with cancer (e.g., fatigue and depression). Although telephone-based interventions are not the main method to be delivered, some inquiries have reinforced the significance of this method in reducing symptom severity and in improving self-management. Researchers

determined that the intervention through telephone was a feasible method of delivering psychosocial services to cancer patients. The utilization of telephone-based psychotherapeutic interventions can decrease symptoms of depression in cancer patients, with the added advantage of lower attrition rates than those usually found in face-to-face psychotherapeutic interventions. This kind of intervention can offer a way of providing intervention at a lower cost in a timely way, in a way that may be more appropriate to users with less stigmatization, with improved control by both providers and patients, and through a way that reduces geographic, time-, and mobility-based remoteness barriers (Nezu et al., 2012).

Breast cancer patients need counseling greatly and they also want to talk with somebody who has the same experience struggling and facing the same situation for returning to normal life (Sharif et al., 2010). About 30% of cancer patients have mental and emotional difficulties which should be treated properly by some intervention such as social or psychological support for their disease in every phase (Tehrani et al., 2011).

Psychosocial interventions are established for improving psychological regulation. Different kinds of interventions are established for different kinds of focuses. Among them, the two most commonly delivering interventions are health education and peer support intervention. Health education concentrates on delivering info concerning the disease and managing approaches. Peer support intervention concentrates on delivering the occasion to talk about their disease with the others who have the same experiences. These kinds of interventions are able to fill the gaps of various social and psychological necessities and are helpful for various kinds of patients (Mens et al., 2016).

Peer support interventions are initially established to deliver social support to patients. Later, the researchers found that peer support intervention may be helpful for maintaining life to be meaningful and purposeful. Among cancer patients, psychological interventions can promote not only the meaning of life but also health status (Mens et al., 2016). Peer group interventions using psychosocial support methods are very helpful for the group of patients with the same disease (Tehrani et al., 2011).

In this study, the effect of peer support multi-component intervention including peer individual counseling, peer group meeting and peer support by telephone on anxiety, depression, and quality of life of female breast cancer patients were tested.

2.13 Behavioral Model of Health Services Use

Access to healthcare services can be defined as the real utilization of individual health services and all that enables or hinders their utilization. Access means not only going to a healthcare center but also receiving accurate services at the correct time to encourage better health results. Hypothesizing and determining access is crucial to accepting and producing healthcare policy in many methods such as foreseeing utilization of healthcare services, encouraging social fairness, and increasing the success and competence of delivering healthcare services.

In this study, a theoretical context based on a behavioral model of healthcare services utilization is applied which highlights contextual as well as individual determinants of accessing healthcare services. Also reviewed are the extents of access defined in accordance with the constituents of the context and how access can be upgraded for every aspect.

According to this model, concentrating on contextual as well as single factors best achieves increasing access to healthcare services. The context contains healthcare association and provider-related elements and public features.

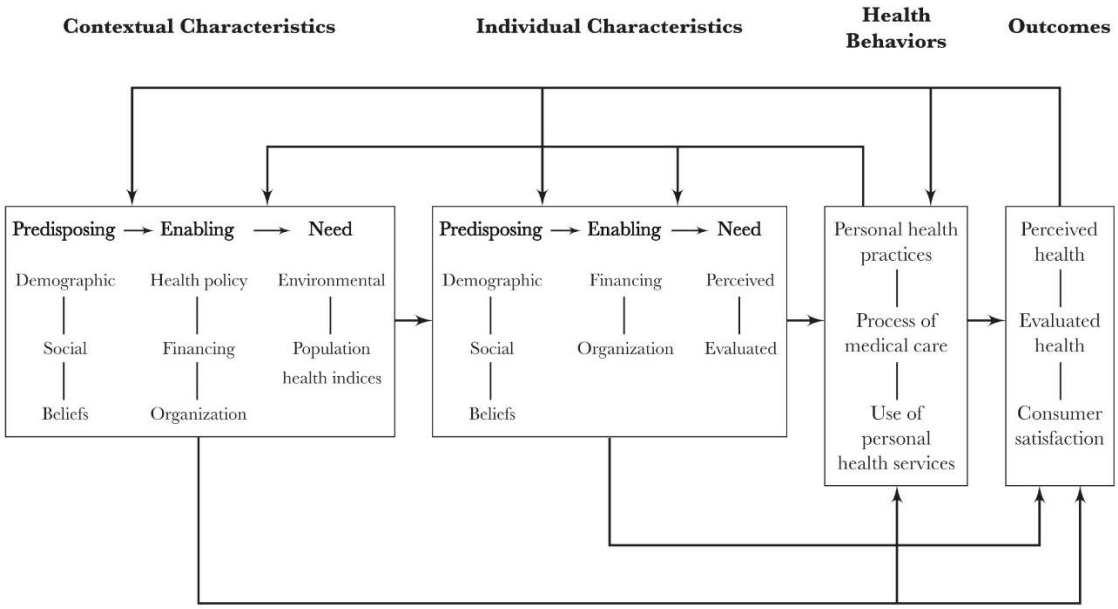


Figure 2Behavioral model of health services use [Source: (Andersen and Davidson, 2001)]

The key elements of contextual characteristics are arranged similarly as individual characteristics including (i) predisposing situations for using or not using of healthcare services although which are not straightly related to the utilization, (ii) enabling situations which assist or hinder the utilization of healthcare services, and (iii) need or situations which are identified by the patients or the healthcare professionals.

2.13.1 Contextual Characteristics

Demographic features contain the age, sex, and married status structure of the public. Relevant measurements for social characteristics contain education, race and ethnicity, percentage of current migrants, occupational status, and rate of criminality. Values and cultural norms and dominant political viewpoints of community or organization concerning how healthcare services have to be planned, funded and prepared available to the people refer to beliefs.

Healthcare plans, funding characteristics, and institutions are involved in the Contextual Enabling Characteristics.

Need characteristics of environment and community health indicators are included in Contextual Need Characteristics.

2.13.2 Individual Characteristics

Demographic characteristics for example age and sex of the people are natural requirements suggestive of the possibility in need of health services. Social factors contain education, occupation, ethnicity, people's social network, and social communications. Beliefs regarding health contain knowledge, attitude, and value that the individual has concerning health and services regarding health.

Funding for healthcare services for people includes the earnings and belongings of them to use in healthcare services. The organization of healthcare services for the individual includes methods of transportation, time of transportation to care and time of waiting for care.

The individual's assessment of the health status and determined status by themselves refer to a perceived need. Findings and assessments about an individual's health condition and requirements for healthcare by healthcare personnel refer to evaluated need.

2.13.3 Health Behaviors

Personal health practices contain nourishment, physical activity, reduction of worry, alcohol drinking and smoking, self-maintenance, and the regular taking of healthcare. The medical care process relates to therapy and health education to the patient, investigation, recommending treatment, and features of the relationship between patients and healthcare providers. Personal health services use is the crucial element of healthy activities in a complete model of access to healthcare.

2.13.4 Outcomes

Perceived health, evaluated health and consumer satisfaction includes in outcomes of the utilization of healthcare services.

In the figure, feedback returns from outcomes to health behaviors, individual characteristics, and contextual characteristics. Feedback permits visions on how to upgrade access. Feedback can also happen at the community level, institutional level or the national level. Displeasure among the community may eventually make modifications of health policy at the national level and successive developments in supporting and forming healthcare services intending to increase access to care (Andersen and Davidson, 2001).

The construct validity of my conceptual framework comes from the theoretical framework of the Behavioral Model of Health Services Use by Andersen because this theoretical model is for health behavior for using health services. In my study, only Individual Characteristics, Health Behaviors, and Outcomes are adopted from the original model. Predisposing Factors, Enabling Factors and Need Factors are assessed as the Individual Characteristics. The use of Personal Health Services is assessed as Health Behaviors. Although it is different from the model because it is not the free choice for the patients, they agree to use the health services by giving consent. But in the future, this kind of healthcare will be one of the health services that the patients can choose as their wish freely. Anxiety, Depression, and Quality of Life which are adopted

as Perceived Health, and Consumer Satisfaction are assessed as the Outcomes in my study. By reviewing the literature, the Behavioral Model of Health Services Use by Andersen was widely used in many studies as the conceptual framework, and, therefore, this study adopted a suitable theoretical framework (Babitsch et al., 2012).

2.14 Validity and Reliability of the original questionnaires for Anxiety, Depression, and QOL

In this study, to assess the anxiety and depression status of the participants, 14 questions (7 for anxiety and 7 for depression) were adopted from Hospital Anxiety and Depression Scale (HADS), Self-rating Anxiety Scale (SRAS) and Self-rating Depression Scale (SRDS).

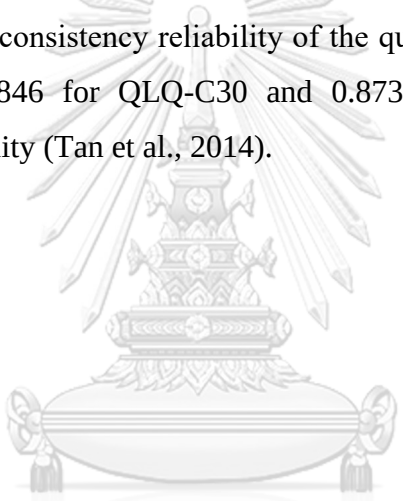
The quality of life status of the participants was assessed by the European Organisation for Research and Treatment of Cancer, Quality of Life Core Questionnaire (EORTC QLQ-C30) which consists of 30 questions and Breast Cancer Module (EORTC QLQ-BR23) which consists of 23 questions.

The Hospital Anxiety and Depression Scale (HADS) questionnaire was developed by A. S. Zigmond and R. P. Snaith, Department of Psychiatry, St. James' University Hospital, Leeds, Yorkshire, England in 1982 (Zigmond and Snaith, 1983). The correlation between HADS and other commonly used questionnaires (such as Beck's depression inventory, the state-trait anxiety inventory, clinical anxiety scale and symptom checklist 90 scale) was 0.60 to 0.80 describing medium to strong correlations. When the depression part of HADS was compared to the Montgomery Asberg Depression Rating Scale, the same level of correlations was found. Therefore, the concurrent validity of HADS is good to very good (Bjelland et al., 2002). The internal consistency reliability of the questionnaire by Cronbach's alpha coefficient was 0.87 for the anxiety subscale and 0.81 for the depression subscale (Djukanovic et al., 2017).

Self-rating Anxiety Scale (SRAS) and Self-rating Depression Scale (SRDS) were developed by Dr. Ohn Hlaing and Dr. Ohn Kyaw in 1977 in Myanmar. A cross-validation study conducted by Dr. Ohn Hlaing and Dr. Ohn Kyaw among 50 clinically diagnosed anxiety cases and 52 normal individuals correctly classified 98% of clinically anxious patients by this scale and only 2 false negatives were found. Classification of the severity of anxiety using this scale was validated against the clinician's rating of anxiety, and the validity calculated in the contingency coefficient was 0.64 ($p < 0.001$). A split-half reliability study by content was done on the validation sample, and the reliability coefficient calculated in spearman's rho was 0.86 after correction by

Spearman-Brown formula (Win et al., 2017b, Win et al., 2017a). The internal consistency reliability of the questionnaire by Cronbach's alpha coefficient was 0.93 for SRAS (Win et al., 2017b) and 0.93 for SRDS (Win et al., 2017a) in the Myanmar population in 2015.

The EORTC QLQ-C30 questionnaire was developed in 1993 and the EORTC QLQ-BR23 questionnaire was developed in 1996 by The European Organization for Research and Treatment of Cancer (EORTC) (Scott et al., 2008). The concurrent validity of the QLQ-C30 questionnaire was tested against EuroQol Group's 5-domain questionnaires (EQ5D) using Pearson Product Moment Correlation. The correlation between the two instruments revealed a moderately strong correlation ($r=0.597$; $P<0.001$). The internal consistency reliability of the questionnaires using Cronbach's alpha test revealed 0.846 for QLQ-C30 and 0.873 for QLQ-BR23 respectively suggesting good reliability (Tan et al., 2014).



CHAPTER (III)

RESEARCH METHODOLOGY

3.1 Study Design

The study design was a randomized controlled trial.

3.2 Study Area

This study was conducted in Shwe Yaung Hnin Si Cancer Foundation Clinic which is located in Botahtaung Township, Yangon, Myanmar.

3.3 Study Population

In this study, the study population was female breast cancer patients who were undergoing chemotherapy at Shwe Yaung Hnin Si Cancer Foundation Clinic.

3.4 Study Period

The study period was from December 2018 to December 2019.

3.5 Sample Size

Sample size was estimated by the test "difference between two independent means (two groups)" by G*power 3.1.9.2 software with

Mean group 1 = 91.15 (Sharif et al., 2010)
Mean group 2 = 80.27
SD group 1 = 13.22
SD group 2 = 20.032
α err prob = 0.05
Power (1 – β err prob) = 0.80
Allocation ratio N2/N1 = 1

Calculated sample size was 31 per group (intervention or control).

The expected drop-out rate was to be 20% (6). Therefore, the estimated sample size for each group was 31 + 6 = 37. The total sample size was 74.

3.6 Sampling Method

3.6.1 Inclusion Criteria for Participants

- Newly registered female breast cancer patients at Shwe Yaung Hnin Si Cancer Foundation Clinic for chemotherapy regardless of taking surgery or radiotherapy
- With the ECOG performance status of 0-2 (Zimmermann et al., 2014).
- Age of 18 years and older (Zimmermann et al., 2014).
- Have a mobile phone and can communicate
- Who are willing to participate and give written consent to participate in the study

3.6.2 Exclusion Criteria for Participants

- Breast cancer patients who face the occurrence of stressful occasions (passing of close relatives/friends, divorce, etc.) throughout the study period (Shayan et al., 2017).
- Recurrent breast cancer patients
- Who receiving second or later cycles of chemotherapy
- Who cannot give verbal consent to attend the intervention sessions regularly according to the study plan (for the intervention group)

The breast cancer patients who register for chemotherapy were screened for eligibility. Eligible patients were requested to take part in the study. When the patient approved to take part, they were randomly allocated into the intervention group or the control group by block randomization to ensure that intervention and control groups are balanced in terms of the number of participants (Ferreira and Patino, 2016).

There were 4 participants in 1 block. There were 2 pieces of paper for the intervention group and 2 pieces of paper for the control group in a bowl. The consented participant drew a piece of paper from that bowl and she was allocated into the group

that described on her piece of paper. This procedure was continued until getting the required sample size of 74 (37 participants in each group) as shown in Figure (3).

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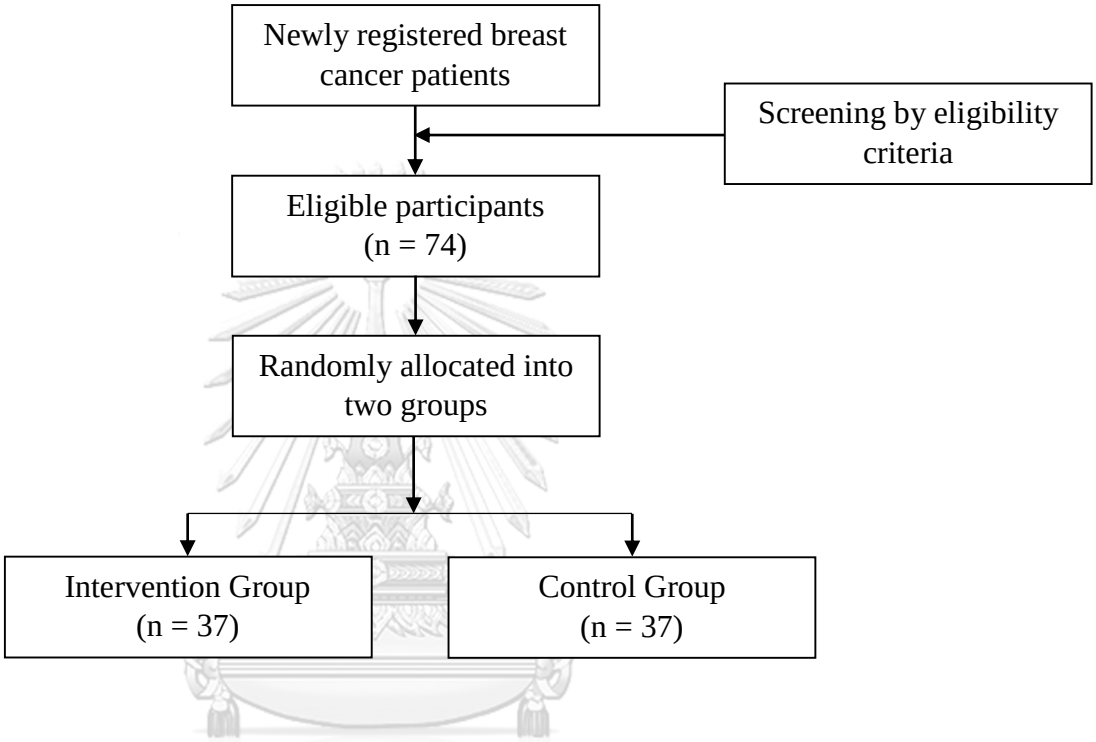


Figure 3Sample Selection Flow Chart

3.7 Intervention

3.7.1 Recruitment of Peer Counselors

The processes of recruiting peer counselors, conducting training for them and conducting peer support intervention to the new breast cancer patients were approved by the authorized person of the cancer foundation before starting the study.

With the help of the administrative nurse of the foundation clinic, the researcher made a telephone call to the breast cancer survivors who completed the chemotherapy formerly at the foundation clinic. The brief explanation of the objective and plan of the study was done by the researcher in this telephone call, and they were invited to the meeting to be held at the foundation clinic for a detail explanation. A total of 25 survivors attended the meeting.

After detail explanation of the study, 12 peer counselors were recruited for the peer support intervention by the following criteria;

(1) Who already completed the major treatments for breast cancer

(2) Who is the former patient received chemotherapy at Shwe Yaung Hnin Si Cancer Foundation Clinic

(3) Who is at least 1-year post-treatment with no recurrence (Allicock et al., 2017)

(4) Who is free from anxiety and depression state screened by SRAS and SRDS questionnaire

(5) Who is fond of staying and sharing the experience with other people

(6) Who has time for attending the training program and conducting the intervention program

(7) Who is willing to participate in this study as the peer supporter

3.7.2 Training for the Intervention

The recruited 12 peer counselors attended the training program for the peer support intervention which was conducted by an experienced clinical psychologist as the principal trainer, and the researcher as the co-trainer at Myanmar Psychological Association. The total hours of the training program for peer facilitators were 50 hours within 4 weeks duration. The training program consisted of three components as follow;

(1) Training for peer individual counseling

(2) Training for the peer group meeting

(3) Training for peer support by telephone

Training for Peer Individual Counseling

The peer counselors received the 30 hours training for basic personal counseling including role-play and practice sessions conducted by the principal trainer at Myanmar Psychological Association as shown in Table (8).

Table 8Training program for peer individual counseling

Sr. No.	Training Day	Morning Session (2 hours and 30 minutes)	Afternoon Session (2 hours and 30 minutes)
1	Day 1	Introduction to Counseling	Joining and Listening
2	Day 2	Reflection of Content	Reflection of Feelings
3	Day 3	Reflection of Contents and Feelings	Use and Abuse of Questions
4	Day 4	Summarizing	Matching Language and Metaphor
5	Day 5	Creating Comfortable Closure	Assessment for Trainees
6	Day 6	Self-efficacy and Empathy	Education for side effects of chemotherapy and management of these side effects, healthy eating and physical activity**

** This training session was conducted by the researcher using the education booklet described detail in Appendix F.

For learning basic personal counseling, each training session was started with the lecture by the trainer regarding the respective topic of the program. After the lecture, the trainees did role-play and practice session and it took about 10 minutes for each practice session.

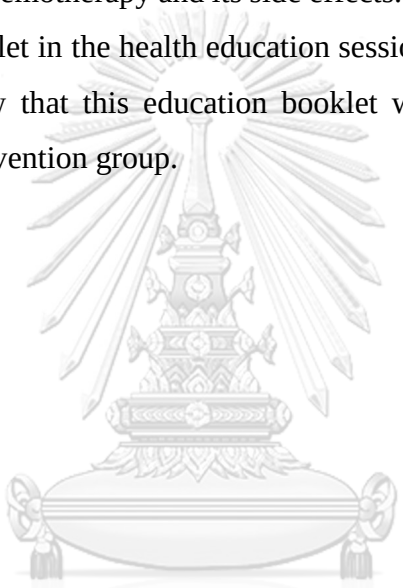
The trainees practiced the relevant micro-skill regarding counseling in a group setting. The practice session was done in a triad or a group of three trainees. One trainee took the role of counselor, a second trainee took the role of a person seeking help, and the third trainee took the role of observer. The room was set up with the chairs to be; the person seeking help faced the counselor and the observer watched both.

The person seeking help in the triad presented a current and real personal problem of her own. The counselor in the triad listened and practiced the micro-skills that had been taught up to that point. It is possible to achieve an effective counseling session by exclusively using only one or two micro-skills. The observer's role in the triad was to take notes of anything significant she observed during the counseling practice session. The observer did not make judgments about what should have done but rather had the task of observing, as objectively as possible and without making interpretations, what actually happened during the practice session. The observer may notice that when the trainee counselor made a particular response, there was a change in the verbal or non-verbal behavior of the person seeking help. The observer may also notice tones of voice used, the pace of speaking, silences, and the use of particular skills. The observer did not interrupt, but the information noticed by the observer was fed back to the trainee counselor and the person seeking help at the end of the session.

At the end of each practice session, the observer shared her observations with the other two members of the triad. After that, the person seeking help was given the opportunity to talk about how she felt during the counseling session, and finally, the trainee counselor explored her feelings, sharing with the group how the session was for them.

The trainer also performed counseling to a randomly selected trainee to discuss a real problem in front of the training group. After this session, the other trainees discussed what they have observed.

Training for health education program was conducted by the researcher using the education booklet described detail in Appendix F. In this booklet, the most common side effects of chemotherapy (such as hair loss, loss of appetite, nausea, vomiting, and fatigue) were described. The methods for controlling these side effects and tips for maintaining healthy body weight were also discussed in this booklet. Additionally, suitable foods for cancer patients were discussed in the healthy eating section. Regular physical activity was also advised in this booklet. The information described in this booklets were discussed during the training session. The trainees also shared their experience regarding chemotherapy and its side effects. The trainees were instructed to use this education booklet in the health education session of the intervention program. The trainees also knew that this education booklet would also be provided to the participants of the intervention group.



Training for Peer Group Meeting

The peer counselors also received the 10 hours training for peer group meetings conducted by the principal trainer at Myanmar Psychological Association as shown in Table (9).

Table 9Training program for the peer group meetings

Sr. No.	**Training Day**	**Morning Session (2 hours and 30 minutes)**	**Afternoon Session (2 hours and 30 minutes)**
1	Day 7	Introduction to Peer Group Meeting	Introduction, Explore the Topic and Encourage to Share
2	Day 8	Identifying Need or Common Purpose	Action Planning and Summarizing Key Discussion Points

In the training of peer group meetings, each training session was designed to provide the trainees with the content on introduction, exploration of the topic and encouraging to share, identifying a need or common purpose, action planning and summarizing key discussion points (WHO, 2017c).

Each training session was started with the lecture by the trainer regarding the respective topic of the program. After the lecture, the trainees did role-play and practice sessions.

All trainees practiced the facilitation skill regarding peer group meetings in a group setting. The trainees were divided into two groups for the practice session and each group had six trainees. For each group, one trainee took the role of facilitator, and the other five trainees took the role of persons seeking help and the group practiced the peer group meeting. The practice sessions were supervised by the principal trainer.

Training for Peer Support by Telephone

The peer counselors also received the 10 hours training for telephone support conducted by the principal trainer at Myanmar Psychological Association as shown in Table (10).

Table 10Training program for peer support by telephone

Sr. No.	**Training Day**	**Morning Session (2 hours and 30 minutes)**	**Afternoon Session (2 hours and 30 minutes)**
1	Day 9	Introduction to Support by Telephone	Introduction, Explore the Topic and Encourage to Share
2	Day 10	Identifying Need or Purpose	Action Planning and Summarizing Key Discussion Points

In the training for telephone support, each session was designed to provide the trainees with the content on introduction, exploration of the topic and encouraging to share, identifying need or purpose, action planning and summarizing key discussion points.

Each training session was started with the lecture by the trainer regarding the respective topic of the program. After the lecture, the trainees did role-playing of telephone contacts, case scenarios, and group discussions. Role plays consisted of two trainees enacting a telephone interaction while seated back-to-back to talk to each other, giving them the opportunity to communicate without seeing the other, and to rely on other senses to connect. The facilitator was asked to respond to verbal content expressed by the person seeking help, using active listening, responding versus reacting, reassurance, encouragement, and psychological support. The critical element of communication was the facilitator's intention to connect with the person on the phone. Adequate opportunities to role-play and self-evaluate were critical to the integration of all learning (Crane-Okada et al., 2010).

Evaluation of the training program

The improvement of the trainees was monitored, and competency was assessed by the principal trainer throughout the training period. The principal trainer evaluated and gave feedback for each trainee after every role-play and practice session.

The assessment for the trainees was done by the self-assessment questionnaire (Appendix E) which is adopted from the textbook “Practicum and internship: Textbook and resource guide for counseling and psychotherapy”, 2013, New York: Routledge, Taylor & Francis Group, by Scott, J., Boylan, J. C., & Jungers, C. M (Scott et al., 2013).

The performance of peer counselors was monitored on an ongoing basis. Each counselor's session with the first participant was tape-recorded and reviewed by the principal trainer. The counselor was given feedback as necessary to help her improve her performance. The researcher observed every counseling session and a group meeting at the clinic.

3.7.3 Implementation of the Intervention

Control Group

The participants of the control group received the education session about chemotherapy (including treatment procedure, benefits, and side effects), advice on healthy eating and regular physical activity by medical doctor or nurse for about 20 min. Patients also received the demonstration of arm and shoulder exercise by nurses. Patients were provided the phone number of the clinic to have a contact for more information. Patients also received a prescription of drugs by a physician for managing the side effects of chemotherapy and other complaints as necessary as usual care.

The Intervention Group

The participants of the intervention group also received the usual care the same with the control group.

Moreover, the following intervention programs were delivered to the participants of the intervention group;

(A) Peer Individual Counseling

(B) Peer Group Meeting

(C) Peer Support by Telephone

The participants of the intervention groups were also provided with the health education booklet (Appendix F) which was discussed by the peer counselors before each peer group meeting.

(A) Peer Individual Counseling

The peer individual counseling session was done one-on-one to participants by a trained peer counselor at the clinic. There were two times of counseling sessions during the intervention. The first time of counseling was done on the day of the first cycle before administering chemotherapy. The second time of counseling was done on the day of the sixth cycle before administering chemotherapy.

The counseling session was started by the introduction of the peer counselor creating a relationship that is the foundation of the process, between the counselor and the counselee. Then the counseling session was continued by the counselor using the micro-skills mentioned below and with details from the textbook “Basic Personal Counselling: A training manual for counsellors”, 7th edition, 2012, by David Geldard and Kathryn Geldard (Geldard and Geldard, 2012).

(1) Joining and Listening

The counselor picked up a lot of information about the participant such as the way of sitting or standing, the non-verbal behavior and the clothes, without asking any question. By doing this, the counselor learned something about how they see themselves, and how they want to be seen. Moreover, the counselor gradually built up a picture of their world and of their view of that world.

The counselor established a relationship and put the person at ease before moving forward into working on issues. The counselor invited the person to talk about their problems. The invitation may be helpful in enabling a nervous person to start talking.

The counselor listened to the person and used strategies that would enable them to find their solutions. By listening to what the person said, the counselor was able to help them to sort through their confusion, identify their dilemmas, explore their options, and come away from the counseling session feeling that something useful has occurred. The counselor attended very carefully to everything that the person was saying and to remember, as far as possible, the details of the conversation. The counselor listened to the person with interest using minimal responses, brief invitations to continue, non-verbal behavior, voice, and silence.

(2) Reflection of Content (Paraphrasing)

The counselor listened to the person and repeated back in the counselor’s own words the essence of what the person had said. By doing this the person believed that the counselor had heard them and also become more fully aware of what they had said.

They were then able to savor the importance of what they were talking about and to better sort out their confusion.

(3) Reflection of Feelings

The counselor listened to the person and repeated back in the counselor's own words the essence of the information and thoughts that made up the content of what they were saying. Sometimes people cried during the counseling session. This could be helpful as it would enable the person to release their emotions more fully than just talking about them. The counselor helped the person to fully experience their emotions and to feel better as a result of releasing those emotions. Rational thinking could start to take place again so that constructive decision making can occur.

(4) Reflection of Contents and Feelings

In addition, sometimes, the counselor would reflect content and feeling in a single and short response. It would be often convenient to combine these two types of reflection. A trusting relationship would be developed which may enable the person to risk exploring the most painful issues of their life, and so to move forward out of confusion.

(5) Use and Abuse of Questions

The counselor asked open questions and closed questions when necessary which were useful for specific purposes listed as follow; questions to invite the person to talk freely, general information-seeking questions, questions that clarify what a person had said, or help them to be more specific, questions to heighten a person's awareness, transitional questions, choice questions, the guru questions, career questions, circular questions, miracle questions, goal-oriented questions, and scaling questions.

(6) Summarizing

The counselor summarized the important things and main issues that were dealt with during the session and presents them in such a way that the person was provided with an overview of what they had been discussing. By doing this, they were better able to see a clear picture of the situation and they were also able to clarify their ideas and combined the various elements of what they were saying into an understandable form.

By summarizing, the counselor tied together with the thoughts, ideas, and feelings that were expressed in the session, leaving the person feeling less confused and better able to deal with their life situation.

(7) Matching Language and Metaphor

The counselor sat in a similar way to the person seeking help, talked at the same pace and with the same tone of voice, and matched their breathing. Doing these things could give the person a feeling of connection with the counselor so that they felt comfortable, safe, and able to share openly.

Moreover, the counselor used similar language to the language used by the person seeking help. If the person is using predominantly 'seeing' language or 'hearing' language or 'feeling' language, it is advantageous for the counselor to use the same language. By doing this, they were likely to develop the person to person relationship. Matching a person's predominant mode and any metaphor used could help in the joining process.

(8) Creating Comfortable Closure

It was fairly common for a counseling session to be one hour. Near the finishing time, the counselor provided a summary of the material discussed during the session. When closing a counseling session, the counselor did not ask questions or reflect content or feelings. The counselor gave some positive feedback.

Every peer counselor completed the logbook (Appendix G) regarding the individual counseling sessions describing the date and duration of the session and the name of the participant. In addition, the researcher observed every counseling session.

(B) Peer Group Meeting

Peer group meetings were held at Shwe Yaung Hnin Si Cancer Foundation Clinic. At this clinic, clinic days are Saturday and Tuesday. To control the contamination, the control group received chemotherapy on Saturday and the intervention group on Tuesday. Peer group meetings were held on Tuesday before administering chemotherapy for the intervention group. The place was noiseless and private enough to do a relaxed discussion for the participants. There were 5 to 9 participants for each group.

Peer group meetings were held on the day of chemotherapy (i.e. approximately 3 weekly). There was a total of 5 peer group meetings for each participant (on the days of the second, third, fourth, fifth and sixth cycle). Every participant attended at least 4 meetings.

The Peer group meeting was facilitated by a facilitator and a co-facilitator. The duty of the facilitator was to explain, discuss, distribute information and understandings, point out progress and deliver emotive support. The facilitator also had to make sure the participants understand all the messages discussed in the meeting.

Moreover, before starting the peer group meeting, the facilitator delivered the health education program to the participants using the education booklet (Appendix F) in two ways communication. The participants experienced the side effects of chemotherapy (such as loss of appetite, nausea, vomiting, and fatigue) after the first cycle, and they applied the suggestions in the booklet to control these side effects. Therefore they had some information to share with the group, and they also had some questions for more information. The peer counselor discussed the side effects of chemotherapy and their management in detail according to the description of the booklet and this session was effective for reducing the side effects of chemotherapy and other symptoms that the patients suffered during the course of chemotherapy.

Peer group meeting was held by the steps as follow;

Before the peer group meeting

(1) Preparation

The researcher defined the date and time for the peer group meeting, and invite the facilitator, co-facilitator, and participants to be present at the peer group meeting.

During the peer group meeting

(2) Introducing

Each peer group meeting was held following the intervention protocol. An explanation of the aim of the meeting by the facilitator and introduction from participants (if they didn't already know each other) was done. During the meeting, the connection between the people who do attend was important. It was important to listen to and support participants while they were exploring their understandings and emotional states.

(3) Explore the Topic and Encourage to Share

The facilitator explored the topic by asking open questions. She also encouraged everyone to share their story and their needs.

The common feeling was developed among the participants and they felt and trusted that they were not facing their difficulties alone by sharing information and feelings in the group. The participants also understood that everyone attended the meeting with different purposes. In the beginning, some participants said that they just need to start by listening to others. They needed some time to express their particular necessities.

Identifying the understandings and requirements of the participants in common was important to make them feel that the connection developed at different levels among the group members.

Some participants were excited to express their feelings during the first session. Therefore, opening discussion of the facilitator was very useful to encourage the participants to express themselves describing their contribution and expectation to the meeting.

Discussion in the group and understanding the difficulties and emotional states of the participants regarding the group meeting were important. The participants might feel stigma, excitement, and absence of faith in the group meeting.

Recognizing the difficulties and identifying the ways that the participants reported them were important. The comfortable environment for developing self-assurance among the participants should be created by the facilitator (e.g. by narrating the story of her own). By doing so, the participants responded to the discussed problem or expressed their opinion on the discussed area. The facilitator encouraged the participants to share. It was important to have a comfortable and kind atmosphere to share for the group session to be successful.

The facilitator encouraged the participants to discuss the problem that they face, discuss the experiences throughout the period of therapy, and state the difficulties that develop and how they managed these difficulties. The facilitator also encouraged the participants to discuss their opinion and potential means to deal with the difficult circumstances, and that could improve the group meeting. It was important to listen carefully without disruption and keeping an unbiased approach, and not to try to alter the feelings of the participants. The participants would create the room for their sense, look for an idea or express their opinion in their way. No pressure should be developed in expressing their opinion. Some participants would start by observing and listening to others during the initial sessions and it was also beneficial. Participants expressed respect for the experience and opinions of others.

(4) Identifying Need or Common Purpose

The conservation was started by discussing the requirement acknowledged by the participants who had the same difficulties. It would establish common interest among the participants and they would see what to share and what to achieve. It was important for the meeting to effectively function for the participants.

After identifying two to three challenges within the participants that affected the discussed topic, encouraged participants to propose ways they could do to deal with the identified challenges. Participants were asked to focus on what they could perform during their daily life, rather than focusing on what they wished for others (such as the

caregivers) to perform for them. Participants were encouraged to state their opinions, ask questions and share their own experiences and do so freely because the session was facilitated by peers rather than a healthcare professional.

The facilitator looked for and identify the participant who still wanted to share something like a meaningful solution got from the session, expressing gratitude, a helpful idea that didn't identify, and opinions for improving or doing in another way to feel comfortable among the participants.

At the end of the meeting

(5) Action planning

After participants had shared their views on the best decisions to the discussed topic, participants were asked to concur on some specific actions for individuals during treatment. The facilitator ensured to identify to do what, where and by when for each action. The facilitator also tried to engage everyone in the discussion in at least one action and concur on some attainable actions to ensure suitable ways in response to individual needs.

(6) Summarizing key discussion points

The facilitator reminded everyone about the developed action plan, as well as the topic and timing for the next meeting.

Concluding the session in a constructive way was important. It was also beneficial for the participants to know how the other participants cope with their problems related to the disease and the treatment. Concluding by the constructive idea could develop hopefulness, inspiration, and self-assurance among the participants. The specific participant who was still feeling poor until the next session was also supported by the facilitator.

(7) Refer participants for more information

Participants were referred to professional healthcare workers or healthcare centers for more information, assistance, and services.

It took about one hour for each peer group meeting. The peer facilitator completed the logbook (Appendix G) regarding the peer group meeting describing the date, duration of the meeting, and the name of the participants. In addition, the researcher observed every peer group meeting.

(C) Peer Support by Telephone

The facilitator also delivered peer support by telephone to the participants. The facilitator called the participants 2 times between the cycles of chemotherapy. Therefore, each participant of the intervention group received 10 times of telephone support during the intervention period. To make sure that the telephone support sessions were not missed, the researcher reminded the counselors by text message or telephone call about the date for conducting telephone support assigned for each participant throughout the intervention period.

During a telephone support session, the facilitator did active listening when the participants discussed their concerns, shared the facilitator's own experiences, assisted in problem-solving, helped the participants to define and prioritize their solutions to problems, and the participants were referred to the health care professionals for more information as necessary. This approach would be beneficial in reducing symptom severity and distress and in improving the self-management of breast cancer patients.

During the telephone contact, the counselor and the patient commonly discussed the side effects that the patient suffered after the chemotherapy. The suggested methods for controlling these side effects described in the education booklet were also discussed. Additionally, the counselor shared her own experience about these side effects and other possible methods for controlling them. The counselor provided emotional support to the patient throughout the telephone contact.

The duration of the telephone calls was varied among individual on average of 25-30 minutes. The peer facilitator also had to complete the logbook (Appendix G) regarding the telephone support sessions describing the date and duration, and name of the participant. The peer counselors were instructed not to delete the call log in the telephone before checking by the researcher. The researcher did cross-check the logbooks and the telephone of the facilitators.

The participant also contacted the peer counselor whenever she needed to seek help or support. However, the frequency and duration of these telephone calls were not recorded in this study. The content of discussion during these telephone calls was almost the same as the routine calls by the counselor.

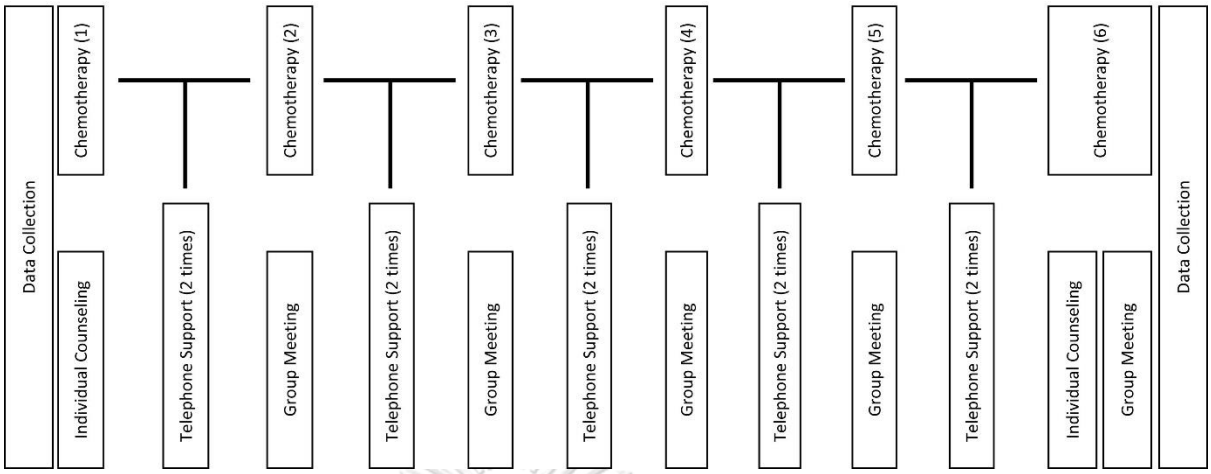


Figure 4Intervention Program

3.7.4 Monitoring of the intervention program

The researcher observed every counseling session and group meeting and monitored whether the counselors conducted the intervention program according to the training program or not. After each session, the researcher discussed with the counselors about the improvement of the participants, and also gave feedback for improvement of the activity of the counselors as necessary. The counselors had to complete the logbooks for their intervention activities. The telephone call logs of the peer counselors were checked regularly and cross-check with the logbook by the researcher.

During the intervention program, refreshments were provided to the peer counselors. The peer counselors were also provided with a telephone bill for conducting telephone support.

After completing the intervention program, the satisfaction of the peer counselors on the intervention was assessed and this study found that the peer counselors were happy, had faith in their capacity to conduct the intervention, and satisfied with their activities in the intervention program. They also expressed that they would keep the supportive activities for breast cancer patients in the future.

3.8 Data Collection

Data collection was carried out by the researcher using interviewer-administered questionnaires. Before data collection, the data collector explained the participants about consent, freedom to participation, right to withdraw, confidentiality, access to the final report and no use of the data for other purposes. The participants who agreed to participate had to sign on the written informed consent form. The participants were explained that the informed consent form which includes the respondent's name and the sign would have been kept separately from the questionnaire and that their answers could not be traced back to them.

It took about 40 minutes to answer the questionnaires. After answering the questionnaires, the researcher checked the answer for completeness and clarified it with the participant immediately. All the answers of the participants were kept confidentially and code was used to identify the data collection form.

In this study, there were three times of data collection; baseline, post-intervention, and follow-up.

Baseline data collection was done before starting the first cycle of chemotherapy. Predisposing factors, enabling factors, need factors were assessed as independent variables at baseline. Knowledge, self-efficacy, empathy, anxiety, depression, and quality of life were also assessed as outcome variables.

Post-intervention data collection was done after completing the sixth cycle of chemotherapy (5 months after the baseline data collection). At that time, knowledge, self-efficacy, empathy, consumer satisfaction, anxiety, depression, and quality of life were assessed as outcome variables.

Follow-up data collection was conducted two months after the completion of chemotherapy (7 months after the baseline data collection). At that time, only distal outcomes (anxiety, depression, and quality of life) were assessed as outcome variables and proximal outcomes were not measured because patients were not available for a 40 minutes questions but had only on average of 15 minutes.

3.8.1 Measurement Tools

The digital bathroom scale (CAMRY EB9313) was used to measure the weight and the stadiometer (KENXIN BWS-302) was used to measure the height for calculating the BMI of the participants. The data of other variables were collected by self-report of the participants using interviewer-administered questionnaires and by reviewing the medical records of the participants.

The questionnaires consisted of 5 main parts addressing predisposing factors, enabling factors, need factors, proximal outcomes (knowledge about chemotherapy, self-efficacy, empathy and consumer satisfaction of the participants) and distal outcomes (anxiety, depression, and quality of life of the participants).

Predisposing Factors

This part included 1 measurement of BMI and 9 questions to answer. Firstly, the BMI of the participant was calculated by the researcher and recorded at the top of the questionnaire (Appendix C). Age, ethnicity, marital status, education, number of children, employment status, menopausal status, smoking, and alcohol consumption of the participant were asked by one question for each variable.

Enabling Factors

This part included 5 questions. Family income, family history of breast cancer, and social support of the participants were asked by one question for each variable. The family relationship of the participants was assessed by 2 questions.

Need Factors

This part included 7 questions. The duration of disease, clinical staging and received treatment of the participants were assessed by 1 question for each variable. The number of hospitalization and co-morbidity were assessed by 2 questions each. Clinical staging, received treatment and co-morbidity of the participants were cross-checked by using medical records.

Proximal Outcomes

There were 22 questions to assess the knowledge of the participants regarding the side effects of chemotherapy and their management. A correct answer scored 1, and scored 0 for the wrong answer.

There were 8 questions to assess the self-efficacy of the participants which were in 5 points Likert type scale as follows; strongly agree, agree, uncertain, disagree and strongly disagree.

There were 6 questions to assess the empathy of the participants which were in 5 points Likert type scale as follows; never, rarely, sometimes, often and always.

There were 12 questions to assess the consumer satisfaction of the participants which are on 5 points Likert type scale. Among these 12 questions, 6 questions were answered only by the participants of the intervention group and another 6 questions were answered by both intervention and control group.

Distal Outcomes

The anxiety state of the participants was assessed by 7 questions in 4 points Likert type scale where 5 questions from Self-rating Anxiety Scale (SRAS) (No. 4, 6, 11, 13 and 19) and 2 questions from Hospital Anxiety and Depression Scale (HADS) (No. 6 and 7) were adopted.

The depression state of the participants was assessed by 7 questions in 4 points Likert type scale where 4 questions from Self-rating Depression Scale (SRDS) (No. 4, 6, 10 and 14) and 3 questions from Hospital Anxiety and Depression Scale (HADS) (No. 2, 3 and 7) were adopted.

To assess the quality of life of the participants, EORTC QLQ-C30 (version 3) questionnaire (a general tool for cancer) and EORTC QLQ-BR23 questionnaire (a specific tool for breast cancer) of the European Organization for Research and Treatment of Cancer (EORTC) Study Group of Quality of Life were used.

The EORTC QLQ-C30 questionnaire consists of 30 questions. The first 28 questions (15 questions for functioning and 13 for symptoms) are in 4 points Likert

type scale as follows; not at all (1p), a little (2p), quite a bit (3p) and very much (4p). The last 2 questions (for global health status/QOL) are in 7 points Likert type scale as follows; very poor (1p) to Excellent (7p) as described detail in Table (11).

The EORTC QLQ-BR23 questionnaire consists of 23 questions which are in 4 points Likert type scale as follows; not at all (1p), a little (2p), quite a bit (3p) and very much (4p). It consists of 4 functioning (8 questions) and 4 symptoms (15 questions) as described detail in Table (11).

Table 11Description of EORTC QLQ-C30 and QLQ-BR23 Questionnaires

	Number of Questions	Likert Scale
QLQ-C30		
Global Health Status/QOL		
Global Health Status/QOL	2	1 – 7
Functioning		
Physical Functioning	5	1 – 4
Role Functioning	2	1 – 4
Emotional Functioning	4	1 – 4
Cognitive Functioning	2	1 – 4
Social Functioning	2	1 – 4
Symptoms		
Fatigue	3	1 – 4
Nausea and Vomiting	2	1 – 4
Pain	2	1 – 4
Dyspnea	1	1 – 4
Insomnia	1	1 – 4
Appetite Loss	1	1 – 4
Constipation	1	1 – 4
Diarrhea	1	1 – 4
Financial Difficulties	1	1 – 4
QLQ-BR23		
Functioning		
Body Image	4	1 – 4
Sexual Functioning	2	1 – 4
Sexual Enjoyment	1	1 – 4
Future Perspective	1	1 – 4
Symptoms		
Systematic Therapy Side Effects	7	1 – 4
Breast Symptoms	4	1 – 4
Arm Symptoms	3	1 – 4
Upset by Hair Loss	1	1 – 4

3.8.2 Quality of Measurement Tools

The construct validity of my conceptual framework comes from the theoretical framework of the Behavioral Model of Health Services Use by Andersen because this theoretical model is for health behavior for using health services. In my study, only Individual Characteristics, Health Behaviors, and Outcomes were adopted from the original model. Predisposing Factors, Enabling Factors and Need Factors were assessed as the Individual Characteristics. The use of Personal Health Services was assessed as Health Behaviors. Although it was different from the model because it was not the free choice for the patients, they agreed to use the health services by giving consent. But in the future, this kind of healthcare will be one of the health services that the patients can choose as their wish freely. Anxiety, Depression, and Quality of Life which were adopted as Perceived Health, and Consumer Satisfaction were assessed as the Outcomes in my study. By reviewing the literature, the Behavioral Model of Health Services Use by Andersen was widely used in many studies as the conceptual framework, and, therefore, this study adopted it as a suitable theoretical framework (Babitsch et al., 2012).

For content validity, of *Questionnaire* in appendix C, the questions for facts were not tested content validity. The following questions were subjected to content validity: from the predisposing factors question (q.) 9 about smoking, q.10 alcohol consumption, from needs factor q. 21-22 co-morbidity, q.23-44 knowledge, q. 45-52 self-efficacy, q.53-58 empathy, q. 59-70 consumer satisfaction, q. 71-77 anxiety, q. 78-84 depression and q. 85-137 quality of life were reviewed by three Myanmar experts (1. Honorary Professor, University of Public Health, Ministry of Health and Sports, Myanmar, 2. Retired Director, Department of Medical Research, Ministry of Health and Sports, Myanmar and 3. Clinical Psychologist, Patron, Myanmar Psychological Association). The Item-Objective Congruence (IOC) Index was used to evaluate the items of the questionnaire based on the score range from +1 to -1 (+ 1 = clearly measuring, 0 = unclear, and -1 = clearly not measuring). The items that had scores of < 0.5 were revised, i.e. q. 17, 18, 21,22, 49 and 50, All the other items had scores of ≥ 0.5 and were accepted.

The questionnaire in the English language was translated into Myanmar language by a Clinical Psychologist from Myanmar Psychological Association who was fluent in both languages and also an expert in anxiety, depression, and quality of life, emphasizing conceptual rather than the literal translation. Using the same approach as that defined in the first step, the instrument was translated back into English by a Psychiatrist from the Directorate of Medical Services who also met the criteria described previously and who had no knowledge of the English version of the questionnaire. After back translation, the translated questionnaire was compared with the original questionnaire to identify discrepancies between them. For some discrepancies between them, the two experts came together to agree on a common translation to get the final version.

For the internal consistency reliability of the questionnaire, the pilot test was conducted by the researcher with 12 breast cancer patients with the age of 18 years and older having similar characteristics with study participants who were not included in this study. The reliability test was performed after collecting the data from these people. Cronbach's Alpha of ≥ 0.70 was accepted for the internal consistency reliability of each part of the questionnaire. Kuder–Richardson Formula 20 (KR-20) was used for the knowledge part of the questionnaire and the value of ≥ 0.70 was accepted. The questionnaires with reliability value < 0.7 were revised. Question No. 51 and 52 in the self-efficacy section, 54, 55 and 56 in empathy section, 71 and 77 in anxiety section, 78, 82 and 84 in depression section and 85, 90, 91 and 114 in the QOL section of QLQ-C30 questionnaire were revised after the pilot test. Cronbach's Alpha values and KR-20 values of the questionnaires were calculated for the pilot test, baseline data collection and post-intervention data collection as described in Table (12).

Table 12Results of the reliability tests for the questionnaires

	Pilot Test	**Baseline**	**Post-intervention**
Knowledge	0.82	0.85	0.88
Self-efficacy	0.68	0.81	0.83
Empathy	0.32	0.47	0.64
Consumer Satisfaction (Both Groups)			0.62
Consumer Satisfaction (Intervention Group)			0.83
Anxiety	0.54	0.78	0.77
Depression	0.51	0.73	0.82
QLQ-C30	0.56	0.78	0.80
QLQ-BR23	0.81	0.78	0.88

3.9 Data Analysis

The questionnaires were coded before entering the data to the computer. Data entry was done twice and SPSS (version 22) statistical software was used for data analysis.

Body mass index (BMI): BMI of the participants of two groups were compared by mean and stand and deviation (SD) at baseline.

Age: Age of the participants of two groups were compared by mean and SD at baseline. Moreover, the age of the participants was categorized into two groups (Petry, 2002) as follow and compared at baseline; Middle-aged Adults (36-55 years) and Older Adults (> 55 years).

Ethnicity: The ethnicity of the participants of the two groups was compared as the nominal scale at baseline.

Marital status: The marital status of the participants was categorized into 3 groups (Single, Married and Widowed/Divorced). The marital status of the participants of the two groups was compared as the nominal scale at baseline.

Education: Education of the participants were categorized into 6 groups (Illiterate, Never gone to school but can read and write simple Myanmar language, Primary school, Middle school, High school, and College or university or above). The education of the participants of the two groups was compared as the nominal scale at baseline.

The number of children: The number of children of the participants of the two groups was compared as the nominal scale at baseline.

Employment status: Employment status of the participants were categorized into 3 groups (Housewife, Employed and Unemployed). The employment status of the participants of the two groups was compared as the nominal scale at baseline.

Menopausal status: Menopausal status of the participants was categorized into 2 groups (Pre-menopause and Post-menopause). Post-menopause was defined by at least 12 months of amenorrhea (Conde et al., 2005). The menopausal status of the participants of the two groups was compared as the nominal scale at baseline.

Smoking: Smoking status of the participants was categorized into 4 groups (Heikkinen et al., 2008) for descriptive statistics; Never-smoker, Ex-smoker, Occasional smoker and Daily smoker. The smoking status of the participants of the two groups was compared as the nominal scale at baseline. (**Never-smoker**: having never smoked or smoked sometimes but fewer than 100 times in her lifetime. **Ex-smoker**: smoking at least 100 times, and not having smoked for at least the past month. **Occasional smoker**: smoking at least 100 times, and most recently within the last month (but not the current date or the day prior). **Daily smoker**: smoking at least 100 times in her lifetime, regularly for at least 1 year and most recently the current date or the day prior).

Alcohol consumption: Alcohol consumption of the participants were classified into 4 groups (Ortola et al., 2016) for descriptive statistics;

Non-drinker (no drinking occasion previously)

Ex-drinker (no drinking occasion in the previous month)

Moderate drinker (< 24 g/day during any drinking occasion in the previous month)

Heavy drinker (≥ 24 g/day during any drinking occasion in the previous month)

A unit of alcohol contains 8 grams of pure alcohol. Calculation is by the equation, (amount in ml x % of alcohol)/1000 = unit of alcohol (Health, 2008). For example,

500 ml of 5% beer	= 2.5 units
750 ml bottle of 12% wine	= 9 units
25 ml of 40% spirit	= 1 unit

Alcohol consumption of the participants of two groups were compared as nominal scale at baseline.

Family income: The family income of the participants of two groups was compared as the nominal scale at baseline.

Family history of breast cancer: Family history of breast cancer of the participants of two groups was compared as the nominal scale at baseline.

Family relationship: The family relationship of the participants of the two groups was constant that every participant had a good family relationship. Therefore, the comparison was not done.

Social support: Social support that the participants receive was compared between two groups as the nominal scale at baseline.

Duration of disease: Duration of the disease of the participants of two groups was constant that less than one year. Therefore, the comparison was not done.

The number of hospitalization: The number of hospitalization of the participants of two groups was compared as the nominal scale at baseline.

Clinical staging: Clinical staging of the participants was categorized into 2 groups (Stage I-II and Stage III-IV) and compared as the nominal scale at baseline.

Received treatment: Received treatment of the participants was constant that surgery only. Therefore, the comparison was not done.

Co-morbidity: Co-morbidity of the participants was compared between 2 groups as the nominal scale at baseline.

Knowledge: This part included 22 questions. A correct answer scored 1, and scored 0 for the wrong answer. The total score range was 0-39. The score was classified into 3 levels for descriptive statistics by Bloom's cut off point, 60%-80% as follows;

High levels	(> 80%)	(32-39)
Moderate levels	(60-80%)	(24-31)
Low levels	(< 60%)	(0-23)

The knowledge scores between two groups were compared by mean and SD.

Self-efficacy: This part included 8 questions which were in 5 points Likert type scale as follow;

Choice	Scores
Strongly agree	5
Agree	4
Uncertain	3
Disagree	2
Strongly disagree	1

Minimum score was 8 and maximum score was 40. All individual answers were summed up for total scores. The total score was divided into 3 groups for descriptive statistics as follow;

Poor	Score ≤ mean – SD	(8-25)
Fair	mean – SD < Score < mean + SD	(26-36)
Good	Score ≥ mean + SD	(37-40)

The self-efficacy scores between two groups were compared by mean and SD.

Empathy: This part included 6 questions which were in 5 points Likert type scale as follow;

Positive statements (4)		Negative statements (2)	
Choice	Scores	Choice	Scores
Never	0	Never	4
Rarely	1	Rarely	3
Sometimes	2	Sometimes	2
Often	3	Often	1
Always	4	Always	0

There were 4 positive statements and 2 negative statements. Minimum score was 0 and maximum score was 24. All individual answers were summed up for total scores. The total score was classified into 3 groups for descriptive statistics as follow;

Poor	Score ≤ mean – SD	(0-11)
Fair	mean – SD < Score < mean + SD	(12-18)
Good	Score ≥ mean + SD	(19-24)

The empathy scores between two groups were compared by mean and SD.

Consumer satisfaction: This part included 12 questions which were on 5 points Likert type scale. Among these questions, 6 questions were for both groups to assess their satisfaction status on services of the clinic, and 6 for the intervention group to assess

their satisfaction status on the intervention program. All individual answers were summed up for total scores. The minimum score was 0 and the maximum score was 30 for each part. The consumer satisfaction scores between the two groups were compared by mean and SD.

Anxiety: There were 7 questions in this part. Questions were on 4 points Likert type scale. Scores ranged from 0 to 21. The total score was classified into 3 groups for descriptive statistics as follow;

0-7	Normal
8-10	Borderline case
11-21	Case

The anxiety scores between the two groups were compared by mean and SD.

Depression: There were 7 questions in this part. Questions were on 4 points Likert type scale. Scores ranged from 0 to 21. The total score was classified into 3 groups for descriptive statistics as follow;

0-7	Normal
8-10	Borderline case
11-21	Case

The depression scores between the two groups were compared by mean and SD.

Quality of Life: To assess the quality of life, the EORTC QLQ-C30 questionnaire and QLQ-BR23 questionnaire were used.

The QLQ-C30 questionnaire consisted of 30 questions composing three groups of outcome; global health status/QOL, five functioning and nine symptoms. Among these questions, global health status/QOL was assessed by 2 questions in 7 points Likert type scale. Five functioning were assessed by 15 questions and nine symptoms were assessed by 13 questions in 4 points Likert type scale.

The QLQ-BR23 questionnaire consisted of 23 questions composing two groups of outcome; four functioning and four symptoms. All questions were on 4 points Likert type scale. There were 8 questions for assessing four functioning and 15 questions for four symptoms.

For the scoring of each domain in QOL, the raw score was calculated first. The raw score was the average score of the items (questions) that contribute to each domain (functioning or symptom). As the second step, these raw scores were transformed into the scores ranging from 0-100 by linear transformation for every functioning and symptom as described detail in Appendix (I). A high score for the global health status/QOL represents a high QOL. A high score for a functioning represents a high or healthy level of functioning. A high score for a symptom represents a high level of symptomatology or problems. The quality of life scores for functioning and symptom scales between the two groups were compared by mean and SD.

At the baseline data collection, independent variables and outcome variables were described as mean, standard deviation (SD), frequency and percentage. To compare the socio-demographic characteristics and medical history of participants between the intervention and control group, independent t-test was used for continuous variables and chi-square test of homogeneity was used for categorical variables. The mean scores of knowledge, self-efficacy, empathy, anxiety, depression, and QOL were also compared between two groups by independent t-test and Mann Whitney U test.

At the post-intervention data collection, significant effects of the intervention on knowledge, self-efficacy, empathy, anxiety, depression, and QOL, except for the symptoms assessed by QLQ-C30, were analyzed by analysis of covariance (ANCOVA) in which the scores at post-intervention data collection were compared between two groups while adjusting for the corresponding baseline score and baseline role functioning score as covariates. The baseline role functioning score was adjusted in the analysis because it was significantly different between the two groups at baseline.

For the symptoms assessed by QLQ-C30 which were not normally distributed, Quade's test for non-parametric analysis of covariance (ANCOVA) was used to test the significant effect of the intervention on them. In Quade's ANCOVA, as the first step, the dependent variables and covariates were ranked ignoring the grouping variable. For the next step, linear regression of the ranks of the dependent variable on the ranks of the covariates was run while saving the unstandardized residuals ignoring the grouping factor. As the final step, one-way analysis of variance (ANOVA) was run using the residuals saved in the previous step as the dependent variable, and the grouping variable as the factor. The F result was the F statistics that Quade used (IBM, 2018).

The mean scores of consumer satisfaction (both groups) were also compared between the two groups at post-intervention data collection by independent t-test.

At the follow-up data collection, linear mixed model with random intercepts was used to test the overall difference in the rate of change in anxiety, depression and QOL scores, except for the symptoms assessed by QLQ-C30, between intervention and control groups (Chakraborty and Gu, 2009). It was the intention-to-treat analysis that the statistics included all randomized cases.

For the symptoms assessed by QLQ-C30 which were not normally distributed, Mann-Whitney U test was used for between-groups comparison and Wilcoxon signed-rank test was used for within-group comparison using pair-wise comparison method for three-time points of data collection.

Statistical significance was set at $p < 0.05$.

Table 13Variables, Measurement Scale and Descriptive Statistics

Variables	Measurement Scale	Descriptive Statistics
Independent Variables		
Predisposing Factors		
BMI	Ratio scale	Mean, SD
Age	Ratio scale	Mean, SD
	Nominal scale	Frequency, Percentage
Ethnicity	Nominal scale	Frequency, Percentage
Marital Status	Nominal scale	Frequency, Percentage
Education	Nominal scale	Frequency, Percentage
Number of Children	Nominal scale	Frequency, Percentage
Employment Status	Nominal scale	Frequency, Percentage
Menopausal Status	Nominal scale	Frequency, Percentage
Smoking	Nominal scale	Frequency, Percentage
Alcohol Consumption	Nominal scale	Frequency, Percentage
Enabling Factors		
Family Income	Nominal scale	Frequency, Percentage
Family History of BC	Nominal scale	Frequency, Percentage
Family Relationship	Nominal scale	Frequency, Percentage
Social Support	Nominal scale	Frequency, Percentage
Need Factors		
Duration of Disease	Nominal scale	Frequency, Percentage
Number of Hospitalization	Nominal scale	Frequency, Percentage
Clinical Staging	Nominal scale	Frequency, Percentage
Received Treatment	Nominal scale	Frequency, Percentage
Co-morbidity	Nominal scale	Frequency, Percentage
Outcome Variables		
Knowledge	Ratio scale	Mean, SD
Self-efficacy	Ratio scale	Mean, SD
Empathy	Ratio scale	Mean, SD
Consumer Satisfaction	Ratio scale	Mean, SD
Anxiety	Ratio scale	Mean, SD
Depression	Ratio scale	Mean, SD
Quality of Life	Ratio scale	Mean, SD

3.10 Ethical Consideration

The study was reviewed and approved (No. IRB/2018/34) by the Institutional Review Board of the Defence Services Medical Research Centre, Directorate of Medical Services, Myanmar.

The purpose and procedure of research were explained to the potential participants thoroughly. The participants were also explained that they were allowed to feel free and also allowed to withdraw at any time from the research process without giving any reason. Moreover, any decision of the participants would not affect their healthcare. The information from this research project was also kept confidential. The data collection procedure would not create any problem for both participants and the data collector. Then, written informed consent was obtained from those who commit to participate. After getting consent, participants were interviewed.

During data collection, when the participant revealed that she suffered from anxiety or depression (i.e. score range of 11 to 21 for anxiety or depression), she was referred to a psychiatrist for further management.

After completing post-intervention data collection, when the effectiveness of the peer support multi-component intervention was acknowledged by most of the participants of the intervention group, a session of peer counseling or telephone support was delivered to the participants of the control group.

CHAPTER (IV)

RESULTS

This study aimed to evaluate the effect of peer support intervention on knowledge about side effects of chemotherapy and their management, self-efficacy in the healthcare of breast cancer (BC), general human empathy, consumer satisfaction on the healthcare services of the clinic as well as the intervention program, anxiety in general, depression in general, and quality of life (QOL) in relation to BC among female BC patients receiving intravenous (I.V) chemotherapy in a cancer clinic in Yangon, Myanmar.

The first section of the result part focuses on describing the socio-demographic characteristics and medical history of the participants as independent variables, and knowledge, self-efficacy, empathy, anxiety, depression and QOL status of the participants as outcome variables at the baseline data collection. These variables were also compared for homogeneity between the intervention group and the control group at baseline.

The second section concentrates on evaluating the immediate effect of the intervention on knowledge, self-efficacy, empathy, anxiety, depression and QOL status of the participants at post-intervention data collection. Consumer satisfaction status was also assessed among the participants at that time.

The third section evaluates the sustainability of the effect of the intervention program on anxiety, depression and QOL status of the participants at follow-up data collection.

A total of 74 female breast cancer patients participated in this study after performing screening of the participants by eligibility criteria among the newly registered BC patients at the study clinic as shown in Figure (5). The participants were randomly allocated into the intervention group or the control group (37 participants in each group).

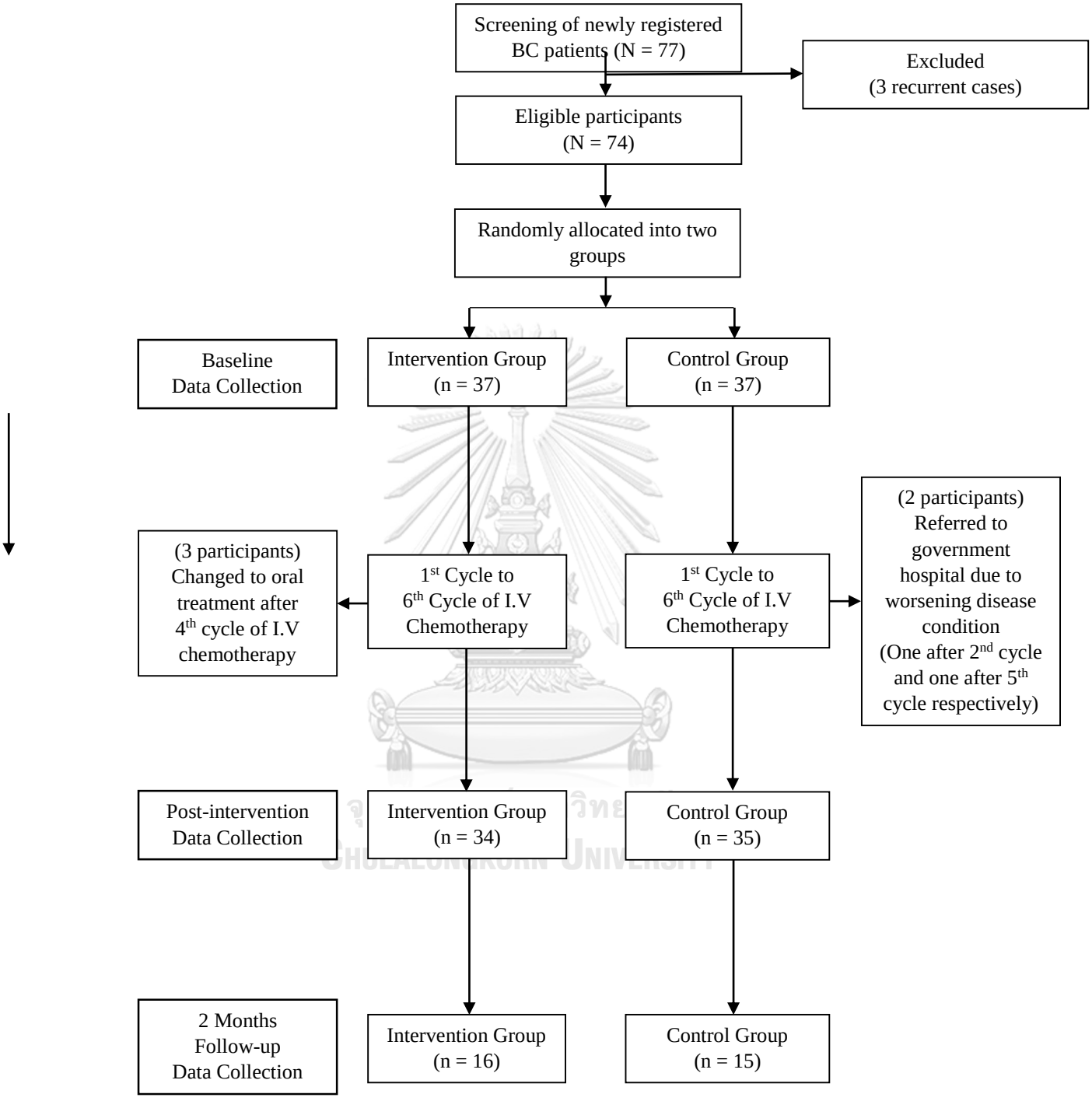
Baseline data collection was done before starting the first cycle of chemotherapy.

During the course of treatment, three participants in the intervention group switched to oral treatment after the fourth cycle of I.V chemotherapy. Therefore, only 34 participants completed six cycles of I.V chemotherapy in this group. In the control group, two participants were transferred to the government hospital (one after the second cycle and one after the fifth cycle of I.V chemotherapy) due to worsening disease conditions. Therefore, only 35 participants completed six cycles of I.V chemotherapy in the control group.

Post-intervention data collection was conducted after completing the sixth cycle of I.V chemotherapy (5 months after the baseline data collection) and a total of 69 participants were available for analysis.

Follow-up data collection was done at the clinic two months after completion of I.V chemotherapy (7 months after the baseline data collection). At that time, a total of 31 participants (16 in the intervention group and 15 in the control group) were available for data analysis. This study could not include all study participants at follow-up data collection because the duration of the study was limited initially to post-intervention effect measurement only, and this part was not planned in the proposal of the study. This part was added to measure the effect of the intervention on a longer period within the time frame approved by the proposal. Therefore, data were collected among the participants as much as possible and analyzed.

Figure 5CONSORT Chart



4.1 Baseline Data Collection

Table 14Distribution and comparison of socio-demographic characteristics of the intervention and control groups at baseline data collection

Variables		Total (N = 74)	Intervention (n = 37)	Control (n = 37)	p-value
BMI (kg/m^2) (Mean ± SD)		26.3 ± 4.7	26.5 ± 4.8	26.2 ± 4.7	0.771 [a]
Age (Years) (Mean ± SD)		51.6 ± 9.5	51.8 ± 9.9	51.4 ± 9.3	0.885 [a]
Age Group (n (%))					
Middle-aged Adults (36-55)		47 (63.5)	25 (67.6)	22 (59.5)	0.469 [b]
Older Adults (> 55)		27 (36.5)	12 (32.4)	15 (40.5)	
Ethnicity					
Bamar		61 (82.4)	30 (81.1)	31 (83.8)	0.760 [b]
Others		13 (17.6)	7 (18.9)	6 (16.2)	
Marital Status					
Single		23 (31.1)	12 (32.4)	11 (29.7)	0.601 [b]
Married		32 (43.2)	14 (37.8)	18 (48.6)	
Widowed/Divorced		19 (25.7)	11 (29.7)	8 (21.6)	
Number of Children					
0-1		45 (60.8)	23 (62.2)	22 (59.5)	0.812 [b]
2 or more		29 (39.2)	14 (37.8)	15 (40.5)	
Education					
Illiterate/Can read and write		3 (4.1)	1 (2.7)	2 (5.4)	0.495 [b]
Primary School		18 (24.3)	7 (18.9)	11 (29.7)	
Middle School		14 (18.9)	9 (24.3)	5 (13.5)	
High School/College and above		39 (52.7)	20 (54.1)	19 (51.4)	
Employment					
Housewife		25 (33.8)	9 (24.3)	16 (43.2)	0.228 [b]
Employed		21 (28.4)	12 (32.4)	9 (24.3)	
Unemployed		28 (37.8)	16 (43.2)	12 (32.4)	
Social Support					
Yes		66 (89.2)	34 (91.9)	32 (86.5)	0.711 [c]
No		8 (10.8)	3 (8.1)	5 (13.5)	
Family Income					
MMK **	**US $**				
******		13 (17.6)	6 (16.2)	7 (18.9)	0.544 [b]
≤ 100,000	≤ 68	27 (36.5)	11 (29.7)	16 (43.2)	
100,001 – 200,000	68 - 136	16 (21.6)	9 (24.3)	7 (18.9)	
200,001 – 300,000	136 - 204	18 (24.3)	11 (29.7)	7 (18.9)	
> 300,000	> 204				

a = Independent t test, b = Chi square, c = Fisher's exact test

** 100,000 MMK = 68 US $ (at December 2019, bank exchange rate of 1 US $ = 1468.55 MMK)

Distribution and comparison of socio-demographic characteristics of the intervention and control groups at baseline data collection are shown in Table (14) and it revealed no significant difference between the two groups.

For all 74 participants, the mean BMI was 26.3 ± 4.7 and the mean age was 51.6 ± 9.5. Regarding the age after categorizing into two groups, the most represented group was middle-aged adults between 36 to 55 years (63.5%). The other most common characteristics were ethnicity of Bamar (82.4%), married (43.2%), having 0-1 child (60.8%), attained higher-level education (52.7%), unemployed (37.8%), and having social support from friends or neighbors (89.2%). As the monthly family income, 36.5% of the participants had 100,001-200,000 Myanmar Kyats (MMK) (equivalent to 68-136 US $). All participants had a good family relationship.

When these characteristics were compared between the two groups, most of the participants were middle-aged adults between 36 to 55 years (67.6% in the intervention group and 59.5% in the control group). Majority of them were ethnicity of Bamar (81.1% in the intervention group and 83.8% in the control group), married (37.8% in the intervention group and 48.6% in the control group), had 0-1 child (62.2% in the intervention group and 59.5% in the control group), attained higher-level education (54.1% in the intervention group and 51.4% in the control group), unemployed (43.2% in the intervention group and 32.4% in the control group) and received social support from friends or neighbors (91.9% in the intervention group and 86.5% in the control group). As the monthly family income, 36.5% of the participants had 100,001-200,000 MMK (68-136 US $) (29.7% in intervention group and 43.2% in control group).

Table 15Distribution and comparison of the medical history of the intervention and control groups at baseline data collection

Variables	Total (N = 74)	Intervention (n = 37)	Control (n = 37)	p-value
Menopausal Status				
Pre-menopause	33 (44.6)	16 (43.2)	17 (45.9)	0.815 [b]
Post-menopause	41 (55.4)	21 (56.8)	20 (54.1)	
Smoking				
Never-smoker	68 (91.9)	36 (97.3)	32 (86.5)	0.198 [b]
Ex-smoker	4 (5.4)	1 (2.7)	3 (8.1)	
Occasional/Daily Smoker	2 (2.8)	0 (0)	2 (5.4)	
Alcohol Consumption				
Non-drinker	69 (93.2)	36 (97.3)	33 (89.2)	0.358 [c]
Ex-drinker	5 (6.8)	1 (2.7)	4 (10.8)	
Family History of Breast Cancer	8 (10.8)	3 (8.1)	5 (13.5)	0.711 [c]
Yes	66 (89.2)	34 (91.9)	32 (86.5)	
No				
Number of Hospitalization				
1	53 (71.6)	22 (59.5)	31 (83.8)	0.055 [b]
2	19 (25.7)	14 (37.8)	5 (13.5)	
3 or more	2 (2.7)	1 (2.7)	1 (2.7)	
Clinical Staging				
Stage I-II	59 (79.7)	29 (78.4)	30 (81.1)	0.772 [b]
Stage III-IV	15 (20.3)	8 (21.6)	7 (18.9)	
Co-morbidity				
0	46 (62.2)	26 (70.3)	20 (54.1)	0.226 [b]
1	23 (31.1)	10 (27.0)	13 (35.1)	
2 or more	5 (6.8)	1 (2.7)	4 (10.8)	

a = Independent t test, b = Chi square, c = Fisher's exact test

Distribution and comparison of the medical history of the intervention and control groups at baseline data collection are shown in Table (15) and it revealed no significant difference between the two groups.

For all 74 participants, majority of participants were postmenopausal women (55.4%), never-smoker (91.9%), non-drinkers (93.2%), had no family history of breast cancer (89.2%), hospitalized for one time to treat breast cancer (71.6%), diagnosed with stage I-II of cancer (79.7%) and had no co-morbidity (62.2%). For all participants, the diagnosis was done within one year and surgery was the only treatment before data collection.

When the medical history of the participants was compared between two groups, most of them were postmenopausal women (56.8% in the intervention group and 54.1% in the control group), never-smoker (97.3% in the intervention group and 86.5% in the control group) and non-drinkers (97.3% in the intervention group and 89.2% in the control group). Majority of the participants had no family history of breast cancer (91.9% in the intervention group and 86.5% in the control group), hospitalized for 1 time to treat breast cancer (59.5% in the intervention group and 83.8% in the control group), diagnosed with stage I-II of cancer (78.4% in the intervention group and 81.1% in the control group) and had no co-morbidity (70.3% in the intervention group and 54.1% in the control group).

Table 16Knowledge, self-efficacy, empathy, anxiety and depression scores of all participants at baseline data collection

Variables	Mean ± SD	Range of Achieved Score (Min – Max)	Range of Achievable Score (Min – Max)
Knowledge	10.4 ± 8.4	0 – 35	0 – 39
Self-efficacy	31.1 ± 5.8	14 – 40	8 – 40
Empathy	15.3 ± 3.7	5 – 24	0 – 24
Anxiety	6.6 ± 3.6	0 – 16	0 – 21
Depression	6.9 ± 3.7	0 – 16	0 – 21

The mean scores of knowledge about side effects of chemotherapy and their management, self-efficacy in the healthcare of BC, general human empathy, anxiety in general and depression in general of all participants at baseline data collection are shown in Table (16).

The mean knowledge score was 10.4 ± 8.4 (range: min = 0, max = 35) out of achievable score of 39. The mean self-efficacy score was 31.1 ± 5.8 (range: min = 14, max = 40) out of achievable score of 40. The mean empathy score was 15.3 ± 3.7 (range: min = 5, max = 24) out of achievable score of 24. The mean anxiety score was 6.6 ± 3.6 (range: min = 0, max = 16) out of achievable score of 21. The mean depression score was 6.9 ± 3.7 (range: min = 0, max = 16) out of achievable score of 21.

Table 17Categorization of all participants regarding knowledge, self-efficacy, empathy, anxiety, and depression at baseline data collection

Outcome Variables in Group	Range (Min – Max)	n (%)
Knowledge		
High	32 – 39	1 (1.4)
Moderate	24 – 31	4 (5.4)
Low	0 – 23	69 (93.2)
Self-Efficacy		
Good	37 – 40	15 (20.3)
Fair	26 – 36	49 (66.2)
Poor	8 – 25	10 (13.5)
Empathy		
Good	19 – 24	15 (20.3)
Fair	12 – 18	45 (60.8)
Poor	0 – 11	14 (18.9)
Anxiety		
Normal	0 – 7	49 (66.2)
Borderline Case	8 – 10	13 (17.6)
Case	11 – 21	12 (16.2)
Depression		
Normal	0 – 7	42 (56.8)
Borderline Case	8 – 10	20 (27.0)
Case	11 – 21	12 (16.2)

Categorization of all participants regarding knowledge, self-efficacy, empathy, anxiety, and depression at baseline data collection are presented in Table (17).

Participants were categorized into three groups (high, moderate and low) according to the knowledge scores by Bloom's criteria. Regarding self-efficacy and empathy, they were categorized into three groups (good, fair and poor) according to their mean and SD scores. Regarding anxiety and depression status, they were categorized into three groups (normal, borderline case and case) according to the questionnaire as described detail in the methodology section (section 3.9: Data Analysis).

Regarding the knowledge, the highest number of participants, 69 (93.2%), had a low knowledge score while only 1 (1.4%) of them had a high score. Besides, the highest number of participants, 49 (66.2%), had a fair level of self-efficacy whereas 10 (13.5) of them had a poor score. Regarding the empathy scores, 45 (60.8%) participants

had a fair level of empathy and 14 (18.9) had a poor score. In relation to anxiety status, 12 (16.2%) participants were identified as anxious, 13 (17.6%) borderline cases and 49 (66.2%) normal. Similarly, regarding the depression status, 12 (16.2%) participants were identified as depressive, 20 (27%) borderline cases and 42 (56.8%) normal.

Table 18Comparison of mean scores of knowledge, self-efficacy, empathy, anxiety, and depression between the intervention and control groups at baseline data collection

Variables	Total (N = 74)	Intervention (n = 37)	Control (n = 37)	p-value [a]
Knowledge (Mean ± SD)	10.4 ± 8.4	9.8 ± 8.1	11.0 ± 8.8	0.568
Self-efficacy	31.1 ± 5.8	31.8 ± 5.5	30.5 ± 6.0	0.331
Empathy	15.3 ± 3.7	15.7 ± 3.7	14.8 ± 3.8	0.328
Anxiety	6.6 ± 3.6	6.4 ± 3.7	6.9 ± 3.7	0.554
Depression	6.9 ± 3.7	6.1 ± 3.1	7.6 ± 4.1	0.090

a = Independent t-test.

The mean scores of knowledge, self-efficacy, empathy, anxiety, and depression of the intervention and control groups were compared at baseline data collection as shown in Table (18). There was no significant differences in knowledge scores (p = 0.568), self-efficacy scores (p = 0.331), empathy scores (p = 0.328), anxiety scores (p = 0.554) and depression scores (p = 0.090) between two groups at baseline.

Table 19Comparison of the mean scores of QOL of the intervention and control groups by EORTC QLQ-C30 questionnaire at baseline data collection

Variables	Total (N = 74) (Mean ± SD)	Intervention (n = 37) (Mean ± SD)	Control (n = 37) (Mean ± SD)	p-value
Global Health Status/QOL				
Global Health Status/QOL	61.8 ± 20.1	64.1 ± 18.7	59.4 ± 21.4	0.315 [a]
Functioning	80.4 ± 15.2	81.7 ± 15.2	79.0 ± 15.2	0.449 [a]
Physical Functioning	66.4 ± 29.2	74.3 ± 22.7	58.5 ± 33.0	**0.019** [a]
Role Functioning	73.3 ± 20.9	75.6 ± 18.6	70.9 ± 23.0	0.335 [a]
Emotional	83.5 ± 19.7	86.0 ± 20.2	81.0 ± 19.3	0.285 [a]
Functioning	80.4 ± 21.7	83.3 ± 18.8	77.4 ± 24.2	0.251 [a]
Cognitive Functioning				
Social Functioning				
	22.8 ± 18.0	21.0 ± 15.6	24.6 ± 20.1	0.643 [b]
Symptoms	4.7 ± 11.2	3.6 ± 7.9	5.8 ± 13.7	0.855 [b]
Fatigue	18.4 ± 25.3	13.0 ± 20.0	23.8 ± 29.0	0.088 [b]
Nausea and Vomiting	11.2 ± 21.5	11.7 ± 21.1	10.8 ± 22.2	0.772 [b]
Pain	29.2 ± 30.6	23.4 ± 28.1	35.1 ± 32.3	0.104 [b]
Dyspnea	15.3 ± 24.1	11.7 ± 21.1	18.9 ± 26.6	0.211 [b]
Insomnia	18.4 ± 24.1	16.2 ± 23.0	20.7 ± 25.2	0.416 [b]
Appetite Loss	0.9 ± 5.4	0.9 ± 5.4	0.9 ± 5.4	1.000 [b]
Constipation	57.6 ± 32.7	58.5 ± 31.8	56.7 ± 34.1	0.906 [b]
Diarrhea				
Financial Difficulties				

a = Independent t-test, b = Mann Whitney U test.

A comparison of the mean scores of QOL of the intervention and control groups by the EORTC QLQ-C30 questionnaire at baseline data collection is displayed in Table (19).

For all participants, the global health status/QOL was fair with the mean score of 61.8 ± 20.1.

Among the five functioning scores, cognitive functioning was the highest (83.5 ± 19.7) followed by physical functioning (80.4 ± 15.2) and social functioning (80.4 ± 21.7). Role functioning was the lowest (66.4 ± 29.2) and emotional functioning score was relatively low (73.3 ± 20.9) among them.

Regarding the symptoms, the most problematic symptom was insomnia (29.2 ± 30.6) which was followed by fatigue (22.8 ± 18.0). The least problematic symptoms were diarrhea (0.9 ± 5.4) followed by nausea and vomiting (4.7 ± 11.2). Financial difficulties was also acknowledged among the participants with a mean score of 57.6 ± 32.7.

When QOL scores assessed by EORTC QLQ-C30 questionnaire were compared between two groups, there was no significant difference in mean scores of global health status/QOL ($p = 0.315$), physical functioning ($p = 0.449$), emotional functioning ($p = 0.335$), cognitive functioning ($p = 0.285$) and social functioning ($p = 0.251$) between two groups. One significant difference only was the mean scores of role functioning ($p = 0.019$) between two groups where the intervention group had a higher score than the control group. Regarding the symptoms, there was no significant difference between the two groups at baseline data collection.

Table 20Comparison of the mean scores of QOL of the intervention and control groups by EORTC QLQ-BR23 questionnaire at baseline data collection

Variables	Total (N = 74) (Mean ± SD)	Intervention (n = 37) (Mean ± SD)	Control (n = 37) (Mean ± SD)	p-value [a]
Functioning				
Body Image	79.3 ± 21.1	80.8 ± 19.6	77.9 ± 22.7	0.555
Sexual Functioning	4.7 ± 13.0	4.0 ± 12.0	5.4 ± 14.1	0.660
Sexual Enjoyment	41.6 ± 15.4	44.4 ± 19.2	40.0 ± 14.9	0.751
Future Perspective	65.7 ± 29.6	71.1 ± 29.5	60.3 ± 29.2	0.118
Symptoms				
Systemic Therapy Side Effects	12.6 ± 10.0	13.2 ± 8.8	12.0 ± 11.1	0.622
Breast Symptom	11.8 ± 12.4	13.5 ± 14.6	10.1 ± 9.8	0.248
Arm Symptom	14.5 ± 17.9	16.2 ± 17.6	12.9 ± 18.2	0.432
Upset by Hair Loss	11.6 ± 21.6	9.7 ± 15.5	14.0 ± 27.9	0.524

a = Independent t-test.

A comparison of the mean scores of QOL of the intervention and control groups by the EORTC QLQ-BR23 questionnaire at baseline data collection are described in Table (20).

For all 74 participants, among the four functioning scores, body image was the highest (79.3 ± 21.1) followed by future perspective (65.7 ± 29.6). Sexual functioning was the lowest (4.7 ± 13.0) and sexual enjoyment score was relatively low (41.6 ± 15.4) among them.

Regarding the symptoms, the most problematic symptom was arm symptom (14.5 ± 17.9) which was followed by systemic therapy side effect (12.6 ± 10.0). The least problematic symptoms were upset by hair loss (11.6 ± 21.6) followed by breast symptom (11.8 ± 12.4).

When QOL scores assessed by EORTC QLQ-BR23 questionnaire were compared between two groups, there was no significant difference in mean scores of body image (p = 0.555), sexual functioning (p = 0.660), sexual enjoyment (p = 0.751) and future perspective (p = 0.118) between two groups at baseline data collection.

Regarding the symptoms, there was no significant difference in mean scores of systemic therapy side effects (p = 0.622), breast symptom (p = 0.248), arm symptom (p = 0.432) and upset by hair loss (p = 0.524) between two groups at baseline data collection.

4.2 Post-intervention Data Collection

Table 21Comparison of the mean consumer satisfaction scores between the intervention and control groups at post-intervention data collection

Variables	Total (N = 69)	Intervention (n = 34)	Control (n = 35)	p-value
Consumer Satisfaction on Healthcare Services by the Clinic (Both Groups)*	28.8 ± 1.3	29.1 ± 1.0	28.5 ± 1.5	0.064 [a]
Consumer Satisfaction on the Intervention Program (Intervention Group)**		28.9 ± 1.8		

a = Independent t-test

* Range of Achievable Score (Min – Max) = 0 – 30
* Range of Achieved Score (Min – Max) = 24 – 30

** Range of Achievable Score (Min – Max) = 0 – 30
** Range of Achieved Score (Min – Max) = 23 – 30

Consumer satisfaction on healthcare services by the clinic was assessed for both intervention and control groups. Consumer satisfaction on the intervention program was assessed for the intervention group at post-intervention data collection. The results are described in Table (21).

Consumer satisfaction on healthcare services by the clinic was compared between two groups and there was no significant difference between two groups (p = 0.064) at post-intervention data collection.

Consumer satisfaction on the intervention program was also assessed among the participants of the intervention group and the mean score was 28.9 ± 1.8 out of a total score of 30.

Table 22Comparison of knowledge, self-efficacy, empathy, anxiety and depression scores between the intervention and control groups at post-intervention data collection

Variables	Intervention (n = 34)	Control (n = 35)	F value	Mean Difference (95% CI)	p-value [a]
Knowledge					
Baseline	9.8 ± 8.1	11.0 ± 8.8	73.798	13.9	<
Post-intervention	27.5 ± 8.3	14.2 ± 6.0		(10.6 – 17.1)	**0.001**
Self-efficacy					
Baseline	31.8 ± 5.5	30.5 ± 6.0	19.264	3.5	<
Post-intervention	35.5 ± 4.1	31.5 ± 5.0		(1.9 – 5.2)	**0.001**
Empathy					
Baseline	15.7 ± 3.7	14.8 ± 3.8	22.635	3.3	<
Post-intervention	19.1 ± 2.6	15.7 ± 3.5		(1.9 – 4.8)	**0.001**
Anxiety					
Baseline	6.4 ± 3.7	6.9 ± 3.7	6.454	-1.7	**0.013**
Post-intervention	3.9 ± 3.6	5.7 ± 2.8		(-3.0 – -0.3)	
Depression					
Baseline	6.1 ± 3.1	7.6 ± 4.1	27.912	-3.1	<
Post-intervention	3.6 ± 2.8	7.3 ± 3.6		(-4.3 – -1.9)	**0.001**

a = analysis of covariance (ANCOVA) adjusting for baseline score and role functioning score

Comparison of knowledge, self-efficacy, empathy, anxiety and depression scores between the intervention and control groups at post-intervention data collection are described in Table (22).

The mean scores in knowledge, self-efficacy, and empathy of the intervention group were greater than those of the control group at post-intervention data collection. The mean scores in anxiety and depression of the intervention group were smaller than those of the control group at post-intervention data collection.

The ANCOVA test was performed while adjusting for the baseline scores and role functioning score as covariates. The results shows that the intervention group had significantly greater mean scores in knowledge (mean difference = 13.9, $p < 0.001$), self-efficacy (mean difference = 3.5, $p < 0.001$), and empathy (mean difference = 3.3,

$p < 0.001$) than the control group. Moreover, the intervention group had significantly smaller mean scores in anxiety (mean difference = -1.7, $p = 0.013$) and depression (mean difference = -3.1, $p < 0.001$) than the control group at post-intervention data collection.

Table 23Comparison of the mean scores of global health status/QOL and five functioning scales by EORTC QLQ-C30 questionnaire between the intervention and control groups at post-intervention data collection

Variables	Intervention (n = 34)	Control (n = 35)	F value	Mean Difference (95% CI)	p-value [a]
Global Health Status					
Baseline	64.1 ± 18.7	59.4 ± 21.4	5.991	10.8	**0.017**
Post-intervention	76.9 ± 18.3	64.2 ± 19.2		(2.0 – 19.7)	
Physical Functioning					
Baseline	81.7 ± 15.2	79.0 ± 15.2	14.168	7.6	**< 0.001**
Post-intervention	85.4 ± 9.0	76.5 ± 8.4		(3.5 – 11.7)	
Role Functioning					
Baseline	74.3 ± 22.7	58.5 ± 33.0	18.081	23.0	**< 0.001**
Post-intervention	83.3 ± 17.4	56.6 ± 27.1		(12.2 – 33.9)	
Emotional Functioning					
Baseline	75.6 ± 18.6	70.9 ± 23.0	16.707	15.9	**< 0.001**
Post-intervention	82.8 ± 18.7	64.9 ± 19.3		(8.1 – 23.7)	
Cognitive Functioning					
Baseline	86.0 ± 20.2	81.0 ± 19.3	10.977	10.1	**0.002**
Post-intervention	87.7 ± 14.3	78.0 ± 15.0		(4.0 – 16.2)	
Social Functioning					
Baseline	83.3 ± 18.8	77.4 ± 24.2	10.322	17.0	**0.002**
Post-intervention	82.8 ± 18.1	64.7 ± 27.9		(6.4 – 27.6)	

a = analysis of covariance (ANCOVA) adjusting for baseline score and role functioning score

Comparison of the mean scores of global health status/QOL and five functioning scales by EORTC QLQ-C30 questionnaire between the intervention and control groups at post-intervention data collection are described in Table (23).

The results shows that after the intervention, the intervention group had significantly greater mean scores in global health status/QOL (mean difference = 10.8, $p = 0.017$), physical functioning (mean difference = 7.6, $p < 0.001$), role functioning (mean difference = 23.0, $p < 0.001$), emotional functioning (mean difference = 15.9, $p < 0.001$), cognitive functioning (mean difference = 10.1, $p = 0.002$) and social functioning (mean difference = 17.0, $p = 0.002$) than the control group.

Table 24Comparison of the mean scores of symptoms by EORTC QLQ-C30 questionnaire between the intervention and control groups at post-intervention data collection

Variables	Intervention (n = 34)	Control (n = 35)	F value	p-value [a]
Fatigue				
Baseline	21.0 ± 15.6	24.6 ± 20.1	10.559	**0.002**
Post-intervention	16.0 ± 15.0	25.3 ± 13.0		
Nausea & Vomiting				
Baseline	3.6 ± 7.9	5.8 ± 13.7	10.112	**0.002**
Post-intervention	4.9 ± 13.3	14.2 ± 17.6		
Pain				
Baseline	13.0 ± 20.0	23.8 ± 29.0	2.915	0.092
Post-intervention	9.8 ± 13.6	20.9 ± 23.3		
Dyspnea				
Baseline	11.7 ± 21.1	10.8 ± 22.2	3.987	0.050
Post-intervention	5.8 ±12.8	15.2 ± 23.3		
Insomnia				
Baseline	23.4 ± 28.1	35.1 ± 32.3	2.800	0.099
Post-intervention	20.5 ± 23.2	33.3 ± 26.8		
Appetite Loss				
Baseline	11.7 ± 21.1	18.9 ± 26.6	0.672	0.415
Post-intervention	14.7 ± 26.1	19.9 ± 24.5		
Constipation				
Baseline	16.2 ± 23.0	20.7 ± 25.2	1.414	0.239
Post-intervention	10.7 ± 19.6	20.9 ± 28.1		
Diarrhea				
Baseline	0.9 ± 5.4	0.9 ± 5.4	0.296	0.588
Post-intervention	1.9 ± 7.9	2.8 ± 9.4		
Financial Difficulties				
Baseline	58.5 ± 31.8	56.7 ± 34.1	2.629	0.110
Post-intervention	38.2 ± 31.9	49.5 ± 30.6		

a = Quade's analysis of covariance (ANCOVA) adjusting for baseline score and role functioning score

A comparison of the symptom scores between the intervention and control groups at post-intervention data collection by the EORTC QLQ-C30 questionnaire is described in Table (24).

The results show that after the intervention, the intervention group had significantly smaller scores in fatigue (p = 0.002), and nausea & vomiting (p = 0.002)

than the control group. There were no significant differences in other symptoms between the two groups.

Table 25Comparison of the mean scores of QOL by EORTC QLQ-BR23 questionnaire between the intervention and control groups at post-intervention data collection

Variables	Intervention (n = 34)	Control (n = 35)	F value	Mean Difference (95% CI)	p-value
Functioning					
Body Image					
Baseline	80.8 ± 19.6	77.9 ± 22.7	4.785	10.3	**0.032**
Post-intervention	85.2 ± 16.0	74.2 ± 25.5		(0.9 – 19.7)	
Sexual Functioning					
Baseline	4.0 ± 12.0	5.4 ± 14.1	0.096	-0.6	0.757
Post-intervention	1.9 ± 7.9	3.3 ± 12.6		(-4.7 – 3.4)	
Sexual Enjoyment					
Baseline	44.4 ± 19.2	39.9 ± 14.9	1.000	33.3	0.500
Post-intervention	83.3 ± 23.5	49.9 ± 23.5		(-39.0 – 45.6)	
Future Perspective					
Baseline	71.1 ± 29.5	60.3 ± 29.2	10.932	22.5	**0.002**
Post-intervention	70.5 ± 28.1	43.8 ± 30.0		(8.9 – 36.1)	
Symptoms					
Systemic Therapy Side Effects					
Baseline	13.2 ± 8.8	12.0 ± 11.1	0.477	-2.2	0.492
Post-intervention	21.6 ± 13.1	23.6 ± 13.0		(-8.7 – 4.2)	
Breast Symptoms					
Baseline	13.5 ± 14.6	10.1 ± 9.8	1.646	-2.5	0.204
Post-intervention	5.1 ± 10.0	5.2 ± 7.0		(-6.4 – 1.4)	
Arm Symptoms					
Baseline	16.2 ± 17.6	12.9 ± 18.2	0.392	-1.5	0.533
Post-intervention	4.2 ± 10.2	5.3 ± 9.0		(-6.4 – 3.3)	
Upset by Hair Loss					
Baseline	9.7 ±15.4	14.0 ± 27.9	0.929	-7.1	0.342
Post-intervention	15.6 ± 25.3	22.9 ± 31.0		(-22.2 – 7.9)	

a = analysis of covariance (ANCOVA) adjusting for baseline score and role functioning score

Comparison of the mean scores of QOL including both functioning and symptoms by EORTC QLQ-BR23 questionnaire between the intervention and control groups at post-intervention data collection are described in Table (25).

The results show that after the intervention, among four functioning scales, the intervention group had significantly greater mean scores in body image (mean difference = 10.3, p = 0.032) and future perspective (mean difference = 22.5, p = 0.002) than the control group. There was no significant difference in mean scores for sexual

functioning and sexual enjoyment between the two groups. Additionally, there was no significant difference in mean scores for symptoms between the two groups.

4.3 Follow-up Data Collection

Table 26Comparison of the rate of change in anxiety and depression scores between the intervention and control groups at follow-up data collection (N = 74)

Variables	Intervention	Control	Difference (Time*Group)	p-value (Time*Group)
Anxiety				
Baseline	6.4 ± 3.7	6.9 ± 3.7	-1.2	**0.009**
Post-intervention	3.9 ± 3.6	5.7 ± 2.8	(-2.2 – -0.3)	
Follow-up	2.6 ± 3.2	5.0 ± 2.5		
Depression				
Baseline	6.1 ± 3.1	7.6 ± 4.1	-1.3	**0.002**
Post-intervention	3.6 ± 2.8	7.3 ± 3.6	(-2.1 – -0.4)	
Follow-up	2.6 ± 2.7	5.2 ± 2.8		

A comparison of the rate of change in anxiety and depression scores between the intervention and control groups at follow-up data collection is described in Table (26). The linear mixed model with random intercepts was used to test the overall difference in the rate of change in anxiety and depression scores between intervention and control groups.

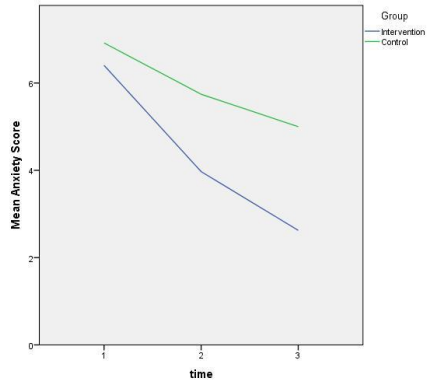


Figure 6Comparison of mean anxiety scores between two groups

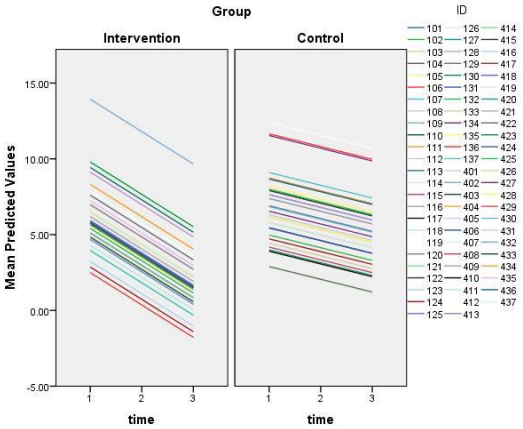


Figure 7Output of linear mixed model analysis for comparison of the rate of change in anxiety scores between two groups for three times of data collection

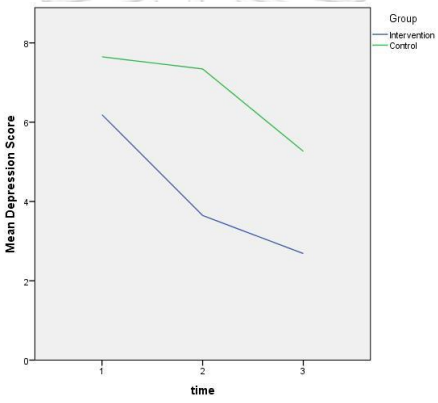


Figure 8Comparison of mean depression scores between two groups

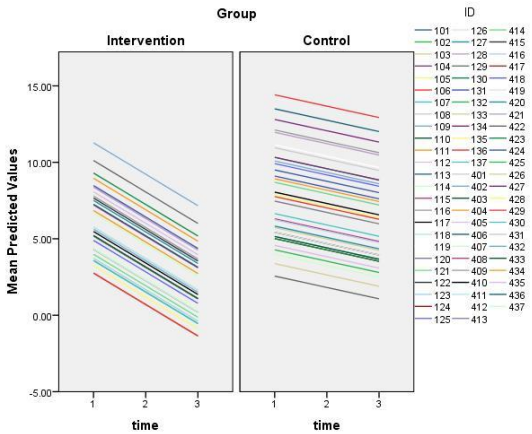


Figure 9Output of linear mixed model analysis for comparison of the rate of change in depression scores between two groups for three times of data collection

The result shows that the intervention group had significantly greater rate of decrease in anxiety (difference = -1.2 per time, p = 0.009) and depression (difference = -1.3 per time, p = 0.002) scores than the control group over time.

Table 27Comparison of the rate of change in global health status/QOL and functioning scores by EORTC QLQ-C30 questionnaire between the intervention and control groups at follow-up data collection (N = 74)

Variables	Intervention	Control	Difference (Time*Group)	p-value (Time*Group)
Global Health Status/QOL Baseline Post-intervention Follow-up	64.1 ± 18.7 76.9 ± 18.3 82.8 ± 13.8	59.4 ± 21.4 64.2 ± 19.2 70.6 ± 18.9	4.6 (-1.7 – 11.0)	0.150
Physical Functioning Baseline Post-intervention Follow-up	81.7 ± 15.2 85.4 ± 9.0 92.1 ± 5.0	79.0 ± 15.2 76.5 ± 8.4 85.8 ± 9.7	3.1 (-1.1 – 7.5)	0.150
Role Functioning Baseline Post-intervention Follow-up	74.3 ± 22.7 83.3 ± 17.4 92.7 ± 12.1	58.5 ± 33.0 56.6 ± 27.1 84.4 ± 13.3	-0.2 (-9.0 – 8.6)	0.962
Emotional Functioning Baseline Post-intervention Follow-up	75.6 ± 18.6 82.8 ± 18.7 89.6 ± 14.1	70.9 ± 23.0 64.9 ± 19.3 81.7 ± 11.4	6.8 (1.2 – 12.4)	**0.017**
Cognitive Functioning Baseline Post-intervention Follow-up	86.0 ± 20.2 87.7 ± 14.3 86.5 ± 18.5	81.0 ± 19.3 78.0 ± 15.0 84.4 ± 11.7	1.0 (-4.6 – 6.8)	0.706
Social Functioning Baseline Post-intervention Follow-up	83.3 ± 18.8 82.8 ± 18.1 86.5 ± 20.4	77.4 ± 24.2 64.7 ± 27.9	5.4 (-1.8 – 12.6)	0.142

		82.2 ± 17.2		

Comparison of the rate of change in global health status/QOL and functioning scores by EORTC QLQ-C30 questionnaire between the intervention and control groups at follow-up data collection are described in Table (27). The linear mixed models with random intercepts was used to test the overall difference in the rate of change in QOL scores between intervention and control groups.

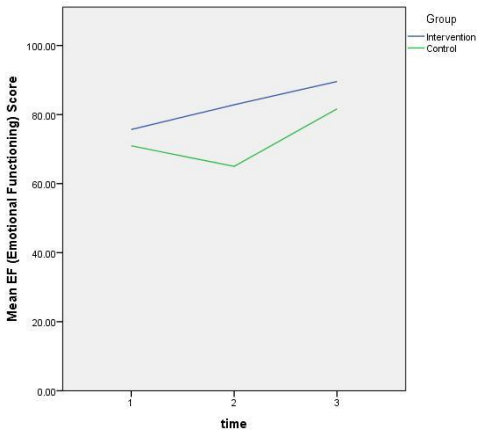


Figure 10Comparison of mean emotional functioning scores between the two groups

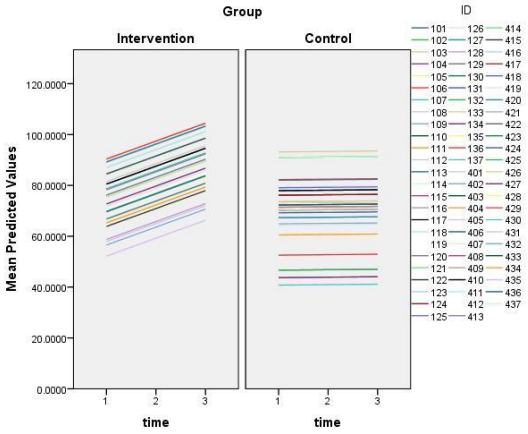


Figure 11Output of linear mixed model analysis for comparison of the rate of change in emotional functioning scores between two groups for three times of data collection

For the functioning of the participants, the intervention group had a significantly greater rate of increase in emotional functioning (difference = 6.8 per time, p = 0.017) than the control group. There was no significant difference in global health status/QOL score and other functioning scores between two groups over time.

Table 28Comparison of the rate of change in symptom scores by EORTC QLQ-C30 questionnaire between the intervention and control groups at follow-up data collection

Variables	Intervention	Control	p-value [a]
Fatigue			
Baseline	21.0 ± 15.6	24.6 ± 20.1	0.643
Post-intervention	16.0 ± 15.0	25.3 ± 13.0	**0.003**
Follow-up	4.2 ± 6.9	12.6 ± 10.2	0.008
p-value	0.077 [b]	0.435 [b]	
	0.003 [c]	**0.008** [c]	
	0.001 [d]	**0.005** [d]	
Nausea & Vomiting			
Baseline	3.6 ± 7.9	5.8 ± 13.7	0.855
Post-intervention	4.9 ± 13.3	14.2 ± 17.6	**0.002**
Follow-up	2.1 ± 5.7	3.3 ± 9.3	0.892
p-value	0.794 [b]	0.095 [b]	
	0.480 [c]	0.414 [c]	
	0.144 [d]	**0.028** [d]	
Pain			
Baseline	13.0 ± 20.0	23.8 ± 29.0	0.088
Post-intervention	9.8 ± 13.6	20.9 ± 23.3	**0.025**
Follow-up	7.3 ± 21.1	7.8 ± 15.3	0.607
p-value	0.263 [b]	0.151 [b]	
	0.158 [c]	0.084 [c]	
	0.288 [d]	0.438 [d]	
Dyspnea			
Baseline	11.7 ± 21.1	10.8 ± 22.2	0.772
Post-intervention	5.8 ±12.8	15.2 ± 23.3	0.060
Follow-up	4.2 ± 11.4	8.9 ± 15.3	0.326
p-value	0.130 [b]	0.131 [b]	
	0.129 [c]	0.157 [c]	
	0.655 [d]	0.084 [d]	
Insomnia			
Baseline	23.4 ± 28.1	35.1 ± 32.3	0.104
Post-intervention	20.5 ± 23.2	33.3 ± 26.8	**0.034**
Follow-up	12.5 ± 26.9	26.7 ± 18.7	**0.016**
p-value	0.710 [b]	0.695 [b]	
	0.143 [c]	0.366 [c]	
	0.008 [d]	0.518 [d]	

Variables	Intervention	Control	p-value [a]
Appetite Loss			
Baseline	11.7 ± 21.1	18.9 ± 26.6	0.211
Post-intervention	14.7 ± 26.1	19.9 ± 24.5	0.223
Follow-up	4.2 ± 11.4	4.4 ± 11.7	0.946
p-value	0.724 [b]	0.591 [b]	
	0.206 [c]	0.096 [c]	
	0.020 [d]	**0.009** [d]	
Constipation			
Baseline	16.2 ± 23.0	20.7 ± 25.2	0.416
Post-intervention	10.7 ± 19.6	20.9 ± 28.1	0.115
Follow-up	8.3 ± 14.9	20.0 ± 16.9	0.052
p-value	0.559 [b]	0.763 [b]	
	0.705 [c]	0.527 [c]	
	0.380 [d]	0.317 [d]	
Diarrhea			
Baseline	0.9 ± 5.4	0.9 ± 5.4	1.000
Post-intervention	1.9 ± 7.9	2.8 ± 9.4	0.669
Follow-up	4.2 ± 11.4	4.4 ± 11.7	0.946
p-value	0.564 [b]	0.317 [b]	
	0.564 [c]	0.317 [c]	
	0.564 [d]	1.000 [d]	
Financial Difficulties			
Baseline	58.5 ± 31.8	56.7 ± 34.1	0.906
Post-intervention	38.2 ± 31.9	49.5 ± 30.6	0.121
Follow-up	29.2 ± 24.0	37.8 ± 24.8	0.241
p-value	**0.003** [b]	0.233 [b]	
	0.004 [c]	0.261 [c]	
	0.454 [d]	0.168 [d]	

a = Between groups comparison (Mann Whitney U test)

b = Within group comparison (baseline vs. post-intervention) (Wilcoxon test)

c = Within group comparison (baseline vs. follow-up) (Wilcoxon test)

d = Within group comparison (post-intervention vs. follow-up) (Wilcoxon test)

A comparison of the symptom scores by the EORTC QLQ-C30 questionnaire between the intervention and control groups at follow-up data collection is described in Table (28).

Mann Whitney U test was used to test the between-group differences and Wilcoxon signed ranked test was used to test the within-group differences for three-time points.

Regarding fatigue, in the intervention group, the scores were decreased from baseline until follow-up. The difference between baseline and post-intervention was not significant. The differences between baseline and follow-up, and post-intervention and follow-up were significant.

In the control group, the post-intervention score was a little higher than the baseline score, and it was decreased until the follow-up. The difference between baseline and post-intervention was not significant. The differences between baseline and follow-up, and post-intervention and follow-up were significant.

When between groups comparison was performed, the only significant difference was found at post-intervention that the control group had significantly higher fatigue scores than the intervention group. At follow-up, there was no significant difference between the two groups.

Regarding nausea and vomiting, when the within-group comparison was performed, there were no significant differences in three-time points of data collection in the intervention group. In the control group, the only difference was found between post-intervention and follow-up.

When between groups comparison was performed, the only significant difference was found at post-intervention that the control group had significantly higher nausea and vomiting score than the intervention group. At follow-up, there was no significant difference between the two groups.

Regarding the pain symptom, when the within-group comparison was performed, there were no significant differences in three-time points of data collection in both intervention and control groups.

When between groups comparison was performed, the only significant difference was found at post-intervention that the control group had significantly higher pain scores than the intervention group. At follow-up, there was no significant difference between the two groups.

Regarding the dyspnea symptom, there were no significant differences in both within-group and between groups comparison in three-time points of data collection.

Regarding the insomnia symptom, when the within-group comparison was performed, a significant difference was found between post-intervention and follow-up in the intervention group. However, there were no significant differences in the control group.

When between groups comparison was performed, the significant differences were found at post-intervention and follow-up that the control group had significantly higher insomnia scores than the intervention group.

Regarding the appetite loss symptom, when within-group comparisons were performed, significant differences were found between post-intervention and follow-up in both groups. However, there were no significant differences in between groups comparison for three-time points of data collection.

Regarding constipation and diarrhea symptoms, there were no significant differences in both within-group and between groups comparison in three-time points of data collection.

Regarding the financial difficulties, when within-group comparisons were performed, significant differences were found between baseline and post-intervention, and baseline and follow-up in the intervention group. However, in the control group, there were no significant differences in the three-time points of data collection.

When the between-groups comparison was performed, there were no significant differences between the two groups in three-time points of data collection.

Table 29Comparison of the rate of change in functioning and symptom scores of by EORTC QLQ-BR23 questionnaire between the intervention and control groups at follow-up data collection (N = 74)

Variables	Intervention	Control	Difference (Time*Group)	p-value (Time*Group)
Functioning				
Body Image	80.8 ± 19.6	77.9 ± 22.7	6.0	0.061
Baseline	85.2 ± 16.0	74.2 ± 25.5	(-0.2 – 12.3)	
Post-intervention	90.6 ± 11.3	78.9 ± 18.6		
Follow-up				
Sexual Functioning				
Baseline	4.0 ± 12.0	5.4 ± 14.1	1.0	0.530
Post-intervention	1.9 ± 7.9	3.3 ± 12.6	(-2.2 – 4.3)	
Follow-up	4.2 ± 11.4	4.4 ± 11.7		
Sexual Enjoyment				
Baseline	44.4 ± 19.2	39.9 ± 14.9	7.5	0.588
Post-intervention	83.3 ± 23.5	49.9 ± 23.5	(-20.5 – 35.7)	
Follow-up	50.0 ± 23.6	33.3 ± 0.0		
Future Perspective				
Baseline	71.1 ± 29.5	60.3 ± 29.2	10.2	**0.030**
Post-intervention	70.5 ± 28.1	43.8 ± 30.0	(1.0 – 19.4)	
Follow-up	81.3 ± 21.0	55.6 ± 27.2		
Symptoms				
Systemic Therapy Side Effects	13.2 ± 8.8	12.0 ± 11.1	-3.6	0.160
Baseline	21.6 ± 13.1	23.6 ± 13.0	(-8.7 – 1.4)	
Post-intervention	6.3 ± 4.2	12.1 ± 14.8		
Follow-up				
Breast Symptoms				
Baseline	13.5 ± 14.6	10.1 ± 9.8	-4.4	**0.014**
Post-intervention	5.1 ± 10.0	5.2 ± 7.0	(-8.0 – -0.9)	
Follow-up	0.0 ± 0.0	5.6 ± 9.8		
Arm Symptoms				
Baseline	16.2 ± 17.6	12.9 ± 18.2	-5.0	0.065
Post-intervention	4.2 ± 10.2	5.3 ± 9.0	(-10.4 – 0.3)	
Follow-up	1.4 ± 3.8	7.4 ± 14.9		
Upset by Hair Loss				
Baseline	9.7 ±15.4	14.0 ± 27.9	-6.7	0.249
Post-intervention	15.6 ± 25.3	22.9 ± 31.0	(-18.2 – 4.8)	
Follow-up	4.2 ± 11.8	8.3 ± 16.7		

A comparison of the rate of change in functioning and symptom scores of by EORTC QLQ-BR23 questionnaire between the intervention and control groups at follow-up data collection is described in Table (29). The linear mixed models with random intercepts was used to test the overall difference in the rate of change in QOL scores between intervention and control groups.

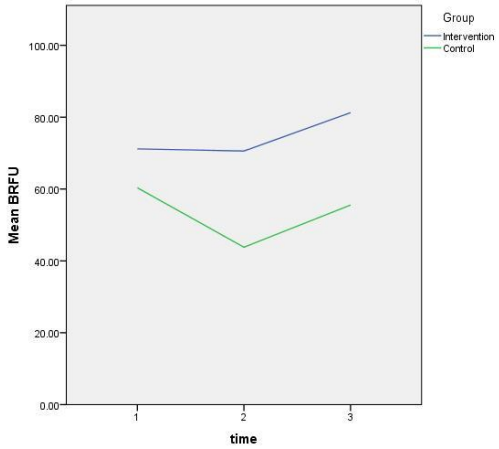


Figure 12Comparison of mean future perspective scores between two groups

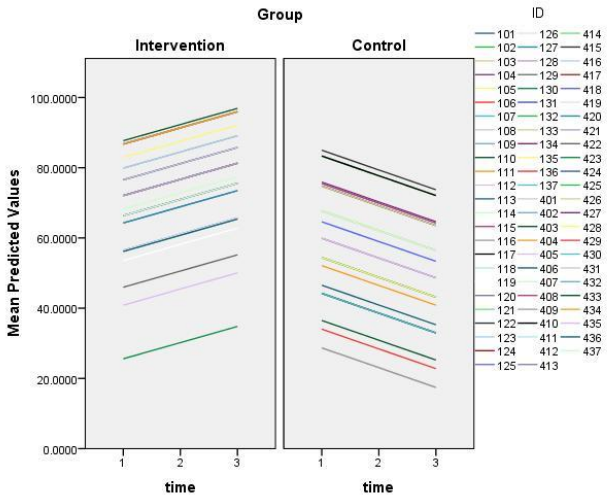


Figure 13Output of linear mixed model analysis for comparison of the rate of change in future perspective scores between two groups for three times of data collection

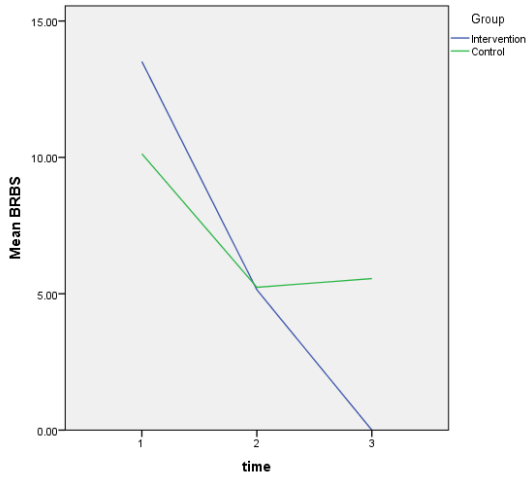


Figure 14Comparison of mean breast symptom scores between the two groups

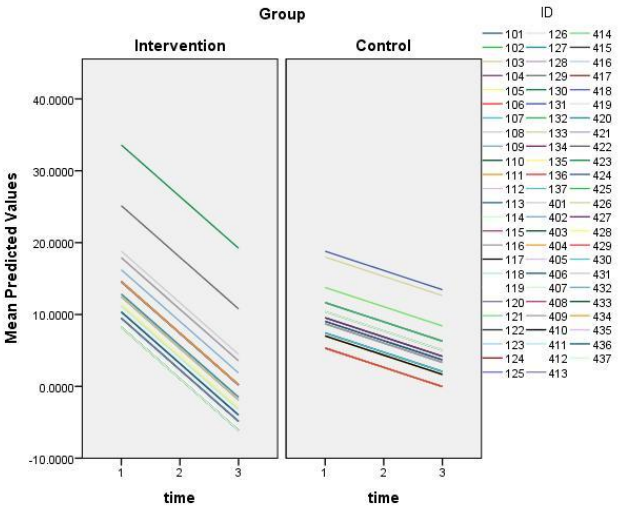


Figure 15Output of linear mixed model analysis for comparison of the rate of change in breast symptom scores between two groups for three times of data collection

For the functioning of the participants, the intervention group had a significantly greater rate of increase in future perspective (difference = 10.2 per time, p = 0.030) than the control group. Regarding the symptoms, the intervention group had a significantly greater rate of decrease in breast symptoms (difference = -4.4 per time, p = 0.014) than the control group. There was no significant difference in other QOL scores between the two groups over time.

Table 30Summary table of significant effects of the intervention

Variables	Post-intervention	Follow-up
Knowledge	< 0.001	
Self-efficacy	< 0.001	
Empathy	< 0.001	
Anxiety	0.013	0.009
Depression	< 0.001	0.002
Global Health Status/QOL	0.017	
Physical Functioning	< 0.001	
Role Functioning	< 0.001	
Emotional Functioning	< 0.001	0.017
Cognitive Functioning	0.002	
Social Functioning	0.002	
Fatigue	0.009	
Nausea and Vomiting	0.022	
Insomnia		0.016
Body Image	0.032	
Future Perspective	0.002	0.030
Breast Symptoms		0.014

The significant effects of the intervention on outcome variables were summarized in Table (30).

At post-intervention data collection, knowledge, self-efficacy, empathy, global health status/QOL, physical functioning, role functioning, emotional functioning, cognitive functioning, social functioning, body image, and future perspective scores were significantly higher in the intervention group than the control group. Anxiety, depression, fatigue, nausea & vomiting scores were significantly lower in the intervention group than the control group.

At follow-up data collection, emotional functioning and future perspective scores maintained a significant increment in the intervention group. Anxiety and depression scores maintained a significant reduction in the intervention group. Additionally, insomnia and breast symptom scores became significantly reduced in the intervention group than the control group which showed no significant difference between two groups at post-intervention data collection.

CHAPTER (V)

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Discussion on Major Findings

The main purpose of this study was to evaluate the effect of Peer Support Intervention on knowledge about chemotherapy, self-efficacy, empathy, anxiety, depression, and QOL of female breast cancer patients on chemotherapy in Yangon, Myanmar. This discussion section focused on post-intervention results for knowledge, self-efficacy, empathy, anxiety, depression, and QOL of the participants compared to baseline, as well as the results at 2 months follow-up data collection evaluating the effect of the intervention on anxiety, depression, and QOL.

5.1.1 Knowledge

At baseline, the knowledge about the side effects of chemotherapy and their management were assessed among the participants. This study found that the majority of the participants (93.2%) had low knowledge about the side effects of chemotherapy and their management, and only 1.4% had high knowledge score. The mean knowledge score was 10 out of a total score of 39.

This very low knowledge score may be due to the fact that, at the study clinic, the initial assessment of the patients together with brief counseling sessions regarding the disease and its treatment was done by the oncologist on the first visit day. The baseline data collection was also done on the first visit day to assess the original knowledge of the participants, and the study found that most of the participants had very low knowledge about the treatment at that time. The proper counseling session was done by the oncologist in the next visit before the administration of the treatment.

A similar result was found in the randomized control trial (RCT) of Wu et al 2018 in Taiwan where the mean knowledge score of the participants was 11 out of a total score of 48. That Taiwan study was conducted among 40 breast cancer patients (Wu et al., 2018) to evaluate the effect of six sessions of psychoeducational intervention

including common side effects of chemotherapy and self-care methods delivered by a nurse individually during the course of chemotherapy.

As a different finding, the result of this study showed a high knowledge score in only 1.4% of participants while a cross-sectional study of Haghpanah et al 2006 in Iran showed 30% of participants had high knowledge and 70% had low knowledge. That Iranian study was conducted among 40 breast cancer patients in the chemotherapy ward in a hospital to evaluate the knowledge and practice of patients about the side effects of chemotherapy. The knowledge of the participants was evaluated by totally reviewing the whole percentage of answers. Among the participants, 27.5% of them had not received chemotherapy previously, 20% were candidates for the second time and 52.5% were for the third time. That Iran study found that 30% had answered correctly, 33% chose wrong answers while 37% of participants didn't know the correct answers. That Iran study concluded that the knowledge level of the participants was poor and the effective education program regarding the side effects of chemotherapy was recommended for the participants (Haghpanah et al., 2006). The main difference between that Iranian study and this study was the chemotherapy experience of the participants. More than 70% of participants in that study had previous experience of chemotherapy while all participants were newly registered patients in this study, and the different characteristics of participants between the studies could explain the different results.

At post-intervention data collection, this study found that the mean knowledge scores of both groups were increased (17 points in the intervention group and 3 points in the control group) and the mean score in the intervention group was greater than that of the control group and this difference was highly significant. Therefore, it could be concluded that the intervention was effective to improve the knowledge of the participants after the intervention.

The improvement of knowledge scores in this study of 17 points in the intervention group was much greater than the finding of the previously cited RCT study in Taiwan which was conducted among 40 breast cancer patients (Wu et al., 2018) to

evaluate the effect of six 60-minutes sessions of psychoeducational intervention delivered by the nurse individually during the course of chemotherapy. In that Taiwan study, data collection was done 4 times; (T1) before chemotherapy, (T2) during the third cycle, (T3) during the fifth cycle, and (T4) 2 weeks after completion of chemotherapy. That study found that the knowledge score of the intervention group was significantly higher than the control group throughout the intervention period until T4. As the increment in knowledge score in the intervention group, 1 point increased from T1 to T2 and 3 points increased from T1 to T4. This difference could be the result of the different methods of intervention between that Taiwan study and this study, maybe more importantly due to the educational intervention in this study which was intensive (face-to-face individually, group and telephone) while that Taiwan study delivered only six 60-minutes education sessions individually during the course of chemotherapy.

A cross-sectional study conducted among 90 cancer patients during the course of chemotherapy in Malaysia found that patients necessitated information about side effects of chemotherapy, and verbal discussion was the most preferred method of education among the patients (Chan and Ismail, 2014). In this study, the methods of delivering education were verbal discussion and written booklets. Therefore, it can be assumed that adding written booklets as the information material can strengthen the effectiveness of the intervention on knowledge of the patients.

Literature review about the effect of an education program on chemotherapy to cancer patients conducted by Valenti, 2014 (Valenti, 2014) remarked that education is important for the understanding of looking after themselves, managing side effects and knowing when to seek healthcare. Education about chemotherapy, side effects, and self-care performances was effective to reduce adverse effects of treatment, relief worry, and increase QOL. It was important to find the most appropriate method for delivering health education regarding chemotherapy to breast cancer patients (Valenti, 2014), and this comment had influenced the decision of multiple methods of health education delivery in this study.

5.1.2 Self-efficacy

At baseline, the self-efficacy status was also evaluated among the participants and the study found that the majority of them (66.2%) had a fair self-efficacy score while 20.3% of them had a good self-efficacy score. The mean self-efficacy score was 31 out of a total score of 40.

A similar finding was identified in the previously cited RCT of Wu, P. H., 2018, conducted among 40 breast cancer patients in Taiwan (Wu et al., 2018) in which the mean self-efficacy score of the participants was 18 out of the total score of 25 at baseline.

According to the Health Belief Model, when people have self-efficacy (i.e. the ability for performing a given behavior), they would be more likely to undertake these activities (Masoudiyekta et al., 2018). In this study, their behavior was related to seeking healthcare of breast cancer and the majority of them had fair self-efficacy scores when categorized by mean ± SD score.

At post-intervention data collection, the effect of the intervention on self-efficacy was evaluated among the participants. This study found that the mean self-efficacy scores of both groups were increased (4 points in the intervention group and 1 point in the control group), and the mean score in the intervention group was greater than that of the control group and this difference was highly significant. Therefore, it could be concluded that the intervention was effective to improve the self-efficacy of the participants after the intervention.

A similar result was found in the RCT study of Lee, R., et al, 2013 in Korea, in which 85 newly diagnosed breast cancer patients (39 in the intervention group and 46 in the control group) participated. The intervention group received peer group support intervention by dyadic pair, once a week for 6 weeks, face-to-face or by telephone. After the intervention, increment in self-efficacy scores were 4 points in the intervention group and 2 points in the control group. (Lee et al., 2013). Therefore, the increment in the intervention group was similar to this study.

The finding of this study was quite similar to the result of previously quoted RCT study in Taiwan which was conducted among 40 breast cancer patients (Wu et al., 2018) to evaluate the effect of six sessions of a psychoeducational intervention on self-efficacy delivered by a nurse during the course of chemotherapy. In that Taiwan study, data collection was done 4 times; (T1) before chemotherapy, (T2) during the third cycle, (T3) during the fifth cycle, and (T4) 2 weeks after completion of chemotherapy. That study found that self-efficacy score of the intervention group was significantly higher than the control group in T3 and T4. As the increment in self-efficacy score in the intervention group, 1 point increased from T1 to T2, 2 points from T1 to T3, and 3 points from T1 to T4.

5.1.3 Empathy

At baseline, the general empathy status was evaluated among the participants and this study found that the majority of them (60.8%) had a fair empathy score with a mean score of 15 out of a total score of 24. Empathy refers to the capability of the participant to know and share the emotional state of others. In this study, the general empathy status of the participants was assessed.

At post-intervention data collection, the effect of the intervention on empathy was also evaluated among the participants. This study found that the mean empathy scores of both groups were increased (4 points in the intervention group and 1 point in the control group), and the mean score in the intervention group was greater than that of the control group and this difference was highly significant. Therefore, the intervention was effective in improving the empathy of the participants.

A similar finding was found in an interventional study that applied online support group intervention among breast cancer patients monitored by a trained facilitator in the USA in 2003. There were 177 participants in that study and the intervention period was 4 months. That study revealed that online support group intervention was significantly effective in improving empathy among the participants after the intervention period (Han et al., 2011).

5.1.4 Anxiety

At baseline, the anxiety status of the participants was assessed, and the study found that 16.2% of the participants were classified as anxious.

A similar finding was found in the cross-sectional study conducted in Thailand in 2007. In that study, participants were 300 female breast cancer patients recruited in the surgical outpatient department (OPD). The prevalence of anxiety disorder among the participants was 16.0% in that study (Lueboonthavatchai, 2007).

At post-intervention data collection, the effect of the intervention on anxiety status of the participants was evaluated in this study. This study found that the mean anxiety scores of both groups were decreased (-3 points in the intervention group and -1 point in the control group), and the mean score in the intervention group was significantly lower than that of the control group after the intervention, and therefore, the intervention was effective on diminishing the anxiety of the participants.

A similar finding was found in an RCT study that evaluated the effect of the multidiscipline mentor-based program on breast cancer patients conducted in China. There were 93 participants in the intervention group and 82 in the control group. The participants of the intervention group received peer mentoring by peer mentors, education by professionals and small group discussion. The intervention was delivered 8 weekly sessions in the first 2 months, as well as 3 sessions at 2 months, 6 months and 12 months after the intervention. Assessments were done at baseline (T1), 2 months (T2), 6 months (T3) and 12 months (T4) after the intervention. As a result, after 6 months of the intervention period, the intervention group showed significantly lowered anxiety scores compared to the control group with a mean difference of -2 points (Ye et al., 2016).

The inconsistent result was found in the previously cited RCT study of Lee, R., et al, 2013 in Korea, in which 85 newly diagnosed breast cancer patients (39 in the intervention group and 46 in the control group) participated. The intervention group received peer group support intervention by dyadic pair, once a week for 6 weeks, face-

to-face or by telephone. After the intervention, anxiety scores showed no change in the intervention group (Lee et al., 2013).

Another contradictory finding was found in a quasi-experimental study that evaluated the effect of Culturally Tailored Peer-Mentoring and Education Intervention on anxiety and depression of breast cancer patients conducted in the USA. There were 14 participants in the intervention group. The participants received peer mentoring by peer mentors and education by specialists, 10 sessions which were conducted weekly. After the intervention, anxiety scores revealed no change among the participants (Lu et al., 2014).

For these studies with dissimilar findings, although the intervention programs were delivered by peers, the components of the intervention and duration of the intervention were different from each other, and these differences might be responsible for the different results among studies. A systematic review and meta-analysis done by Matsuda, A., 2014 (Matsuda et al., 2014) guessed that different administration methods of intervention may have different results in the effectiveness.

At follow-up data collection, the anxiety status of the participants was assessed to evaluate the sustainability of the intervention program on it.

Regarding the anxiety status of the participants, the intervention group still had a significantly lower anxiety score than the control group. The mean differences from baseline to follow-up data collection were -4 points in the intervention group and -2 points in the control group.

A similar finding was found in a quasi-experimental study of Montazeri, et al in Iran which was conducted to assess the long-term impact of attending a peer support group on anxiety and depression of breast cancer patients before and after 1-year participation in the monthly support group meeting. In that Iran study, all current members of the three Iranian breast cancer support groups (n = 56) participated in the study. Comparing anxiety at baseline and follow-up, anxiety scores were significantly reduced (mean difference = -1, $p = 0.03$) after 1-year participation in the support group.

Analysis of the qualitative data indicated that group involvement was the most important factor that contributed to the improvement in the psychological well-being of the patients. The findings of that study suggest that participation in cancer support groups had a long-term effect on reducing anxiety in breast cancer patients (Montazeri et al., 2001).

Therefore, the finding suggested that the peer support intervention had a significant long-term effect on reducing anxiety status of the breast cancer patients and similar long-term effects could have also been shown in this interventional study if the study could be extended to one year.

5.1.5 Depression

At baseline, the depression status of the participants was assessed in this study, and the study found that 16.2% of the participants were classified as depressed.

Similarly, the systematic review of Zainal, N. Z., 2013 found that the prevalence of depression among breast cancer patients was with a range of 12.5-31% in Asian studies using different assessment tools (Zainal et al., 2013).

At post-intervention data collection, the effect of the intervention on depression status of the participants was assessed. This study found that the mean depression scores of both groups were decreased (-3 points in the intervention group and -0.3 points in the control group), and the mean score in the intervention group was significantly lower than that of the control group after the intervention, and therefore, the intervention was effective on diminishing the depression status of the participants.

A similar finding was found in the previously quoted quasi-experimental study with only the intervention group by Lu, et al., 2014 in the USA. That USA study found that, after the 10 weekly sessions of intervention, depression scores were significantly decreased among the participants (Mean difference = -0.4, p = 0.03) (Lu et al., 2014). Although the mean scores in depression were decreased in both studies, the reduction in this study was greater than the USA study. These different results could be explained by the different questionnaires with different scoring schemes. That USA study used

the depression and anxiety subscales from the Brief Symptom Inventory (BSI) including six items with five points Likert scales, while this study used seven items questionnaires with four points Likert scales.

A similar finding was also found in previously cited RCT study of Ye, et al 2016 conducted in China. As the result, after 6 months of the intervention period, the intervention group showed significantly lowered depression scores compared to the control group with a mean difference of -3 points (Ye et al., 2016).

The inconsistent result was found in the previously cited RCT study of Lee, R., et al, 2013 which was conducted in Korea. That Korea study found that, after the intervention period of 6 weeks, there were no changes in depression scores in the intervention group (Lee et al., 2013).

For these studies, it can be assumed that the different results were due to the differences in components of the intervention and duration of the intervention between studies. Different administration methods of intervention may have different results in the effectiveness (Matsuda et al., 2014).

At follow-up data collection, the depression status of the participants was assessed to evaluate the sustainability of the intervention on it.

Regarding the depression status of the participants, the intervention group still had a significantly lower depression score than the control group. The mean differences from baseline to follow-up data collection were -4 points in the intervention group and -2 points in the control group.

A consistent finding was found in the previously quoted quasi-experimental study of Montazeri et al., 2001 in Iran. It was conducted to assess the long-term impact of attending a peer support group on anxiety and depression of breast cancer patients before and after 1-year participation in the monthly support group meeting. Comparing depression at baseline and follow-up, depression scores were significantly reduced (mean difference = -1, $p = 0.008$) after 1-year participation in the support group. The findings of that Iran study suggest that participation in cancer support groups had a

long-term effect in reducing depression in breast cancer patients (Montazeri et al., 2001). Therefore, the findings suggested that the peer support intervention had a significant long-term effect on reducing the depression status of breast cancer patients.

In this study, both anxiety and depression status of the participants in the control group were decreased over time without any intervention program. These findings were supported by the results of the longitudinal study of Stafford et al which was conducted for 2 years duration in the USA that anxiety and depression symptoms were significantly decreased among the cancer patients at 8 weeks and 40 weeks after the baseline assessment (Stafford et al, 2015).

5.1.6 Quality of Life

Assessment of QOL describes the experience of patients on the effect of diagnosis and treatment of cancer in their daily living and, QOL is also viewed as an essential outcome measure for quality of oncology practice (Chui et al., 2015, Gangane et al., 2017). Furthermore, improvement in QOL is also related to longer survival in cancer patients (Quinten et al., 2009). However, the research regarding QOL among female breast cancer patients is poorly established in Myanmar. Hence, it is necessary to explore the QOL of cancer patients and discover the possible approaches to promote their QOL. In this study, the effect of peer support intervention on QOL of female breast cancer patients was also explored in a cancer clinic in Yangon, Myanmar by two questionnaires namely the EORTC QLQ-C30 questionnaire (a general tool for cancer) and EORTC QLQ-BR23 questionnaire (a specific tool for breast cancer).

5.1.6.1 Global Health Status/QOL assessed by EORTC QLQ-C30 Questionnaire

At baseline, this study found that the global health status/QOL of all participants was fair with a mean score of 61.8 ± 20.1. It was comparable to the reference value of 61.8 ± 24.6 which was reported in a 49 countries study by the EORTC group (Scott et al., 2008), but lower than the scores in previous Myanmar study (Htet, 2016) and Morocco study (El Fakir et al., 2016) (66.1 ± 21.2 and 68.5 ± 18.5 respectively), and higher than in Egypt (RAM et al., 2018) and Iran (Shafaie et al., 2019b) studies (51.9 ± 25.7 and 59.1 ± 17.4 respectively).

In these mentioned studies, QOL of the patients were assessed during the different courses of treatment. In the previous cross-sectional study in Myanmar (Htet, 2016) which was conducted among 200 breast cancer patients in the radiotherapy ward, all participants received combination therapies (Surgery + Chemotherapy, or Surgery + Chemotherapy + Radiotherapy). In the cross-sectional study in Morocco (El Fakir et al., 2016) in which 1463 breast cancer patients participated, participants received surgery only or chemotherapy only or combination therapies. In the cross-sectional study in Egypt (RAM et al., 2018) where 181 breast cancer patients participated,

surgery only or radiation only or combination therapies were the treatments that the patients received. In the cross-sectional descriptive study in Iran (Shafaie et al., 2019a) where 166 women breast cancer patients took part, they were receiving chemotherapy only or combination therapies. In this study, surgery was the only treatment that the participants had received and they were just before adjuvant chemotherapy.

The study of El-Sharkawi reported that combination treatment was associated with the poorest QOL, whereas radiotherapy with better QOL than chemotherapy (El Sharkawi, 1997). Additionally, the literature review done by Haddou Rahou, B., 2016 (Haddou Rahou et al., 2016) also explained that different types of treatment stage resulted in the different QOL score among breast cancer patients that the combination treatment expected the poorest QOL, and the radiotherapy revealed significantly less effect on QOL than chemotherapy. Moreover, variations in population in terms of disease duration, staging of disease and received treatment might have an effect on the observed differences (Haddou Rahou et al., 2016).

At post-intervention data collection, the effect of the intervention on global health status/QOL of the participants was assessed, and this study found that the improvement in global health status/QOL of the intervention group was significantly greater than the control group after the intervention. Therefore, the intervention was effective to improve the global health status/QOL of breast cancer patients in this study.

The global health status/QOL status of the patients was expected to be decreased over time. However, in this study, the global health status/QOL status of the control group was also increased after chemotherapy without any intervention. It was a very stressful period for them because they were recently diagnosed with breast cancer, they felt worried about the disease and they suffered side effects of chemotherapy. When the chemotherapy was completed, the patients felt relief from these stressful occasions and this condition could be explained the improvement in global health status/QOL in the control group without any intervention.

Similarly, the improvement in global health status/QOL was also reported in the randomized controlled trial (RCT) of Sharif, F., 2010 (Sharif et al., 2010) conducted

among 100 Iranian female breast cancer patients after completing surgery, chemotherapy and radiotherapy, and currently on hormonal therapy. There were 50 participants in each group. That Iran study found that four sessions of peer-led education intervention during one month was effective for improving the global health status/QOL of the participants.

A similar finding was also found in the RCT of Cho, O., 2006 (Cho et al., 2006) which was conducted among 55 female breast cancer patients after completing surgery, chemotherapy, and radiotherapy in South Korea. There were 28 participants in the intervention group and 27 in the control group. That study found that the intervention program consisting of education by specialists, exercise and peer support group activity for 10 weeks duration had a significant effect to improve QOL.

Similarly, the RCT of Napoles, A. M., 2015 (Napoles et al., 2015) conducted among 151 women breast cancer patients after surgery with or without chemotherapy or radiotherapy in the USA where 76 participants in the intervention group and 75 in the control group, also reported that peer-delivered stress management intervention once a week for eight weeks was effective on improving the overall QOL.

As the consistent result, the RCT of Giese-Davis, J., 2016 (Giese-Davis et al., 2016) conducted among 104 breast cancer patients in the USA after surgery and currently on chemotherapy or radiotherapy or hormonal therapy also found that weekly peer navigator individual support intervention for six months was effective for improving breast cancer specific well-being. Thus, the finding of the present study supported the results of previous studies on the effectiveness of peer support intervention in promoting the overall QOL of breast cancer patients.

At follow-up data collection, the global health status/QOL of the participants were assessed to evaluate the sustainability of the intervention on it.

At that time, although the global health status/QOL score of the intervention group was higher than the control group, the difference over time was not significant between the two groups.

The dissimilar finding was found in the RCT of Sharif, F., 2010 (Sharif et al., 2010) conducted among 100 Iranian female breast cancer patients. That Iran study found that the global health status/QOL score of the intervention group was significantly higher than the control group at 2 months follow-up data collection.

Sharif, F explained that psychological support interventions were beneficial for the well-being of breast cancer patients, although it was not able to conclude that one type of intervention was more effective than another. Patients had to be in a breast cancer support group to deal with their disease, and the patient support group had a significant role in improving the QOL of breast cancer patients.

5.1.6.2 Functioning assessed by EORTC QLQ-C30 Questionnaire

At baseline, five functioning scales namely physical, role, emotional, cognitive and social functioning were assessed. Among them, cognitive functioning and social functioning were found to be the highest scores and role functioning and emotional functioning revealed the lowest scores in this study.

The results of this study were comparable to the findings of the previously cited studies done in Morocco (El Fakir et al., 2016) and in Egypt (RAM et al., 2018) where cognitive functioning and social functioning were found to be the highest scores and role functioning and emotional functioning revealed lowest scores.

This study found that cognitive functioning score of the participants was the highest among the five functioning scales. A similar finding was also found in the cross-sectional study of Safaee, 2008 (Safaee et al., 2008) which was conducted among 119 breast cancer patients in the chemotherapy ward in Iran in 2006. The consistent finding was also found in another Iranian study which was the previously quoted cross-sectional study of Shafaie, 2019 (Shafaie et al., 2019a). The cross-sectional study done by Brezden, C. B., 2000 among 71 breast cancer patients and 36 healthy women as the control in Canada, reported that chemotherapy was related to impairment in cognitive functioning in breast cancer patients (Brezden et al., 2000). The finding of no-association in this study could be explained by the fact that this study was conducted before the start of chemotherapy and therefore, it was too early to detect this association.

The social functioning score was also high among functioning in this study. The previously cited literature review of Haddou Rahou, B., 2016 (Haddou Rahou et al., 2016) found that effective social support system in the Arab communities lead to reduce the pressure and improve the health of Arab women. Therefore, a higher social functioning score revealed in this study could be explained that all participants had a good family relationship and they had psychological support from their family. Moreover, almost 90% of the participant had social support from their friend or neighbors and it could also be a contributing factor for having a high social functioning score.

In this study, emotional functioning score was relatively low among functional scales. The study of Haddou Rahou, B., 2016 (Haddou Rahou et al., 2016) commented that female breast cancer patients suffered from a feeling of upset for disfigurement, fear of denial by their spouses and loss of femininеness which could lead to having poor emotional functioning.

This study revealed that role functioning score of the participants was the lowest among five functioning. The study of Haddou Rahou, B., 2016 (Haddou Rahou et al., 2016) explained that female breast cancer patients felt great pressure due to the burden of work as well as commitments of their roles as mothers and housewives. In this study, the respondents felt that their ability to do their work, daily activities or leisure time activities was limited and it led to having poor role functioning among the participants.

At post-intervention data collection, the effect of the intervention on five functioning scales of the participants was assessed, and this study found that the improvement in all functioning scales of the intervention group, except for the social functioning, was significantly greater than the control group after the intervention. Therefore, the intervention was effective to improve physical functioning, role functioning, emotional functioning and cognitive functioning of the breast cancer patients.

Regarding the social functioning, the social functioning score in the intervention group was very marginally decreased (-0.5 points) after the intervention, while the score in the control group was decreased (-12.7 points), and that difference between the two groups was significant at post-intervention data collection. Therefore, the intervention was effective to maintain the social functioning of the participants.

Similarly, the previously cited RCT study of Sharif, F., 2010 (Sharif et al., 2010) in Iran also approved that peer-led education intervention which was done 4 times during a month, was effective for promoting all those functioning among breast cancer patients.

The consistent findings were also reported by the previously quoted RCT study of Napoles, A. M., 2015 (Napoles et al., 2015) in the USA that physical well-being, social/family well-being, emotional well-being, and breast cancer concern among the participants were significantly improved by peer-delivered stress management intervention which was done once a week for 8 weeks.

In contrast, the RCT of Mens, M. G., 2016 (Mens et al., 2016) conducted among 245 breast cancer patients in the USA found that peer support meetings once a week for eight weeks had no significant improvement in mental health and physical health components after the intervention. The main difference between that USA study and this study was the duration of the intervention. That USA study conducted the intervention for about 2 months while this study conducted for about 5 months, and this difference in the duration of the intervention might be responsible for the different results.

The inconsistent results were also found in the quasi-experimental study of Tehrani, A. M., 2011 (Tehrani et al., 2011) conducted among 61 female breast cancer patients after surgery receiving radiotherapy or medical treatment in Iran. That Iran study found that after six sessions of peer-led meetings for three months, there was no significant difference in physical functioning, role limitation and social functioning between intervention and control groups. As stated above, the difference in the duration of the intervention between studies might be responsible for the different results.

The RCT study of Ghavami, H., 2017 (Ghavami, 2017) which was conducted among 80 breast cancer patients in Iran, proposed that different duration of intervention might be related to the different results.

Moreover, the previously quoted systematic review and meta-analysis done by Matsuda, A., 2014 (Matsuda et al., 2014) guessed that different administration methods of intervention may have different results in the effectiveness of the intervention on QOL among breast cancer patients. For these studies, although the intervention programs were delivered by peers, the components of the intervention were different from each other. Moreover, there was a difference in the duration of intervention between this study and others. Therefore, different duration of intervention and

different administration methods of intervention between the studies could explain the different results.

At follow-up data collection, five functioning scales of the participants were assessed to evaluate the sustainability of the intervention on these outcomes.

At that time, the intervention group had a significantly higher emotional functioning score than the control group and the difference over time was significant between the two groups. Therefore, the peer support intervention had a significant effect on improving emotional functioning of the participants over time.

As a dissimilar result, only emotional functioning was significantly improved at follow-up data collection in this study, while all the functioning scales were significantly improved in the previously cited RCT of Sharif, F., 2010 in Iran. In that Iran study, the peer-led education intervention had a significant effect on improving all five functioning scales (physical, role, emotional, cognitive and social) of breast cancer patients two months after the intervention (Sharif et al., 2010). Different administration methods of intervention between Iran study and this study could explain the different results.

5.1.6.3 Functioning assessed by EORTC QLQ-BR23 Questionnaire

At baseline, four functioning scales namely body image, sexual functioning, sexual enjoyment, and future perspective were assessed. Among them, body image scored the highest followed by a future perspective score. Sexual functioning score was the lowest and sexual enjoyment score was relatively low.

Inconsistent results were found in the cross-sectional study of Nageeti T H (2019) (Nageeti et al., 2019) which was conducted among 88 female breast cancer survivors in Saudi Arabia, where sexual functioning score was the highest followed by sexual enjoyment, in addition, future perspective score was the lowest followed by body image. The difference between that Saudi Arabia study and this study was the time of assessment. That Saudi Arabia study assessed the QOL of the participants after completing the major treatments and more than half of the participants were on hormonal therapy. In this study, QOL was assessed recently after the surgery and this difference could be accounted for the different results.

At post-intervention data collection, this study found that, among the four functioning scores, the body image score of the intervention group was significantly higher than the control group after the intervention. Moreover, although the future perspective scores were decreased in both groups, the score of the intervention group was significantly greater than the control group after the intervention period. Therefore, it could be concluded that the peer support intervention was effective to improve body image scores and maintain the future perspective status of breast cancer patients during the course of chemotherapy.

As the different finding, in the previously quoted RCT study of Sharif, F., 2010 in Iran found that all four functioning scores namely body image, sexual functioning, sexual enjoyment, and future perspective, were increased in the intervention group and decreased in the control group after the intervention period and the intervention was effective to improve all functioning scores of the breast cancer patients (Sharif et al., 2010).

Sharif, F. guessed that the peer group method was effective for improving the sexual function because they could discuss this issue in a relaxed environment. But in this study, the participants didn't discuss their sexual issues in a group meeting and it could be due to the culture of the society. Therefore, it could be a factor for the intervention program not having a significant effect on sexual functioning and sexual enjoyment of the participants in this study.

At follow-up data collection, functioning scores of the participants were assessed to evaluate the sustainability of the intervention on these outcomes.

At that time, the intervention group had a significantly higher future perspective score than the control group and the difference over time was significant between the two groups. Therefore, the peer support intervention had a significant effect on improving future perspective of the participants at follow-up data collection.

As the dissimilar finding, the RCT study of Sharif et al 2010 also found that the peer-led education intervention had a significant effect on improving all four functioning scores (body image, sexual functioning, sexual enjoyment, and future perspective) of breast cancer patients two months after the intervention (Sharif et al., 2010). In that Iran study, all four functioning scores increased over time in the intervention group and decreased gradually in the control group. But in this study, the only future perspective of the participants was improved at follow-up data collection. These different results could be explained by the reason stated previously that the sexual issues were not discussed during the group meeting among the participants in this study due to the culture of the society. Sharif, F., also explained that culture was an influencing factor on sexual issues and body-image and Asian women thought that it was shameful to discuss their sexual issues.

5.1.6.4 Symptoms assessed by EORTC QLQ-C30 Questionnaire

At baseline, eight symptoms (namely fatigue, nausea & vomiting, pain, dyspnea, insomnia, appetite loss, constipation, and diarrhea) and financial difficulty status were assessed. Among eight symptoms, insomnia, fatigue, and pain were the most problematic symptoms that the participants had with the highest mean scores. Diarrhea was the least problematic symptom followed by nausea and vomiting among the study participants in this study.

Similar findings were found in the previously quoted cross-sectional study done in Egypt (RAM et al., 2018), a cross-sectional study in Croatia among 153 breast cancer patients (Separovic et al., 2019) and 2 cross-sectional studies among breast cancer patients in Saudi Arabia with the sample size of 310 and 88 respectively (Imran et al., 2019, Nageeti et al., 2019) where the highest scores were found in insomnia, fatigue and pain, while the lowest scores were in diarrhea and, nausea and vomiting.

A study conducted in the USA by Bradwell and Ancoli-Israel remarked that patients with fatigue and insomnia before chemotherapy suffered more fatigue and poor QOL during chemotherapy than women with fewer symptoms before chemotherapy (Bardwell and Ancoli-Israel, 2008).

At post-intervention data collection, the effect of the intervention on symptoms of the participants was evaluated, and this study found that fatigue, and nausea & vomiting symptoms of the intervention group were significantly lower than the control group after the intervention. Therefore, the peer support intervention program was effective to alleviate fatigue, and nausea & vomiting symptoms of breast cancer patients. However, although the other symptom scores in the intervention group were lower than the control group after the intervention, these differences were not significant between the two groups.

The different findings were found in the previously cited RCT study of Sharif, F., 2010 (Sharif et al., 2010) that the intervention group had significantly lower fatigue, pain, insomnia, and appetite loss symptoms than the control group, and there were no

significant differences in other symptoms. The different findings among studies could be explained by the different components of the intervention to the participants. In the study of Sharif, F., health education section included the concept of cancer, breast cancer, diagnosis, treatment, complications, self-care, relaxation techniques and adaptation to the illness, while this study included the side effects of chemotherapy and their management, advice on healthy eating and advice on regular physical activity.

The previously cited quasi-experimental study of Tehrani, A. M., 2011 (Tehrani et al., 2011) in Iran found that there was no significant difference in body pain scores between two groups after the peer-led meeting intervention of six sessions in three months. These different findings could be explained by different durations and different administration methods of intervention. Another difficulty was using different assessment tools for QOL among studies. The study of Tehrani, A. M., 2011 used the SF-36 questionnaire while the study of Sharif, F., 2010 used the EORTC QLQ-C30 questionnaire and, thus, it was difficult to compare the different outcome domains among the studies.

At follow-up data collection, symptom scores of the participants were assessed to evaluate the sustainability of the intervention on these outcomes. At that time, insomnia score in the intervention group was significantly lower than the control group.

The different findings were found in the study of Sharif, F., 2010 that fatigue and insomnia scores were significantly lower in the intervention group than the control groups at 2 months follow-up data collection. The other symptoms showed no significant difference between the two groups at follow-up in that study (Sharif et al., 2010). These differences could also be explained by the different components of the intervention to the participants as stated above.

5.1.6.5 Symptoms assessed by EORTC QLQ-BR23 Questionnaire

At baseline, four symptoms namely systemic therapy side effects, breast symptoms, arm symptoms and upset by hair loss were assessed. Among them, symptom scores didn't reveal many differences between each other. The most problematic symptom was arm symptoms having a mean score of 14.5 out of 100. The least problematic symptom was upset by hair loss with a mean score of 11.6.

The different results were found in the previously quoted cross-sectional study of Nageeti T H (2019) in Saudi Arabia that upset by hair loss had the highest mean score with 61.5 while systematic therapy side effect revealed the lowest mean score of 39.1. That Saudi Arabia study also found that having chemotherapy was significantly associated with a higher upset by hair loss. Different findings between Saudi Arabia study and this study could be explained by the different courses of treatment. The participants of that study had completed the major treatments for breast cancer, while in this study, participants were recently after surgery and before chemotherapy. Therefore, in this study, most of the participants didn't have hair loss and they didn't feel upset by hair loss.

At post-intervention data collection, this study found that systematic therapy side effects and upset by hair loss scores were increased in both groups. Breast symptom and arm symptom scores were decreased in both groups. However, these changes showed no significant difference between the two groups and it could be concluded that the intervention had no immediate effect on these symptoms of breast cancer patients.

Dissimilar findings were found in the previously quoted RCT of Sharif, F., 2010 in Iran. In that Iran study, systemic therapy side effects scores were decreased in the intervention group and increased in the control group, and that difference was significant. Breast symptom, arm symptoms and upset by hair loss scores showed no changes in both groups immediately after the intervention. Therefore, the intervention program had an immediate effect on improving the systemic therapy side effects among the participants in that Iran study (Sharif et al., 2010).

At follow-up data collection, symptom scores of the participants were assessed to evaluate the sustainability of the intervention on these outcomes.

Regarding the breast symptom scores of the participants, the intervention group had a significantly lower score than the control group and the difference over time was significant between the two groups. Therefore, the peer support intervention had a significant effect on alleviating breast symptoms of the participants over time. There were no significant differences in other symptoms between the two groups at that time.

As the different findings, the RCT study of Sharif et al 2010 found that the peer-led education intervention had a significant effect on relieving systemic therapy side effects, breast symptoms and upset by hair loss of breast cancer patients two months after the intervention (Sharif et al., 2010).

Sharif, F. explained that psychological support interventions were beneficial for the well-being of breast cancer patients, although it was not able to conclude that one type of intervention was more effective than another. Patients had to be in a breast cancer support group to deal with their disease and support groups had a significant role in improving the QOL of breast cancer patients.

For these dissimilar findings, although the intervention program was delivered by peers in the study of Sharif. F., 2010, the components of the intervention and duration of the intervention were different from this study. These differences might be responsible for the different results. A systematic review and meta-analysis done by Matsuda, A., 2014 guessed that different administration methods of intervention may have different results in the effectiveness of the intervention.

Sharif, F. also suggested that breast cancer patients should participate in physiotherapy sessions for improving physical functioning, and reducing breast symptoms and arm symptoms. Participating in a physiotherapy session together with peer support could be effective for improving the QOL of breast cancer patients.

In this study, anxiety, depression, and QOL of the participants were assessed at the follow-up data collection to evaluate the sustainability of the intervention on these outcomes. Knowledge, self-efficacy and empathy status were not assessed at that time because it was assumed that there would be no significant changes in these three variables during 2 months duration after the intervention.

In this study, at 2 months follow-up data collection, the effectiveness of the intervention program was maintained on anxiety, depression, emotional functioning, future perspective, and breast symptoms of the participants. Therefore, it could be concluded that the effectiveness of the peer support intervention was maintained mainly on the emotional aspects of breast cancer patients after the intervention period.

5.2 Benefits, Strengths and Limitations of the Study

5.2.1 Benefits of the Study

After receiving the peer support intervention, the participants had improvement in knowledge about chemotherapy, self-efficacy, empathy, and QOL, as well as in control of their anxiety and depression status.

Capacity building of peer supporters was achieved by the training program on counseling, facilitating group meeting and conducting telephone support.

Capacity building of peer supporters was also achieved by training programs regarding health education on knowledge about the side effects of chemotherapy and their management, advice on healthy eating and advice on regular physical activity.

The network between the breast cancer survivors (peer supporters) and newly diagnosed patients was established which will be useful to implement the supportive programs and to conduct the research programs in the future.

The findings of the study will be presented to the Defence Services Medical Research Centre, Myanmar to be helpful for the implementation of the peer support program for cancer patients in Myanmar in the future.

5.2.2 Strengths of the Study

To my knowledge, it was the very first study on the effectiveness of the peer support intervention on knowledge, self-efficacy, empathy, anxiety, depression, and QOL among the breast cancer patients during chemotherapy in Myanmar.

New services (that is peer support intervention including peer individual counseling, peer group meeting and peer support by telephone) for breast cancer patients were developed in Myanmar.

Selection bias and confounding due to unequal distribution were minimized by random allocation of the participants into the intervention or control group. Block randomization also ensured that the intervention and control groups were balanced in terms of the number of participants.

The training program for the peer supporters was conducted by the well experienced clinical psychologist by lectures and practical sessions to guarantee the quality of it.

Competency of the trainees was also evaluated by the principal trainer, well experienced clinical psychologist, throughout the training period and at the end of the training program.

Quality of life of the participants was measured by using a specific questionnaire for cancer (QLQ-C30) containing 30 questions and a specific questionnaire for breast cancer (QLQ-BR23) containing 23 questions instead of using general QOL questionnaire (such as WHO QOL-BREF containing 26 questions).

5.2.3 Limitations of the Study

This study had a time limitation of the intervention period (about 5 months) so that long-term intervention might reveal different results from this study. It was not possible to complete the follow-up data collection in all participants after the intervention due to the long recruitment time (about 7 months) and only about 50% of participants were assessed at follow-up data collection to evaluate the sustainability of the effect of the intervention on outcomes of the study.

In this study, the multi-component intervention (including counseling, group meeting, and telephone support) was delivered to the participants. Therefore, it was not possible to describe the effect of an individual component of the intervention on change of anxiety, depression, and quality of life of participants after the intervention compares to those of participants before the intervention.

Other effective interventions on anxiety and depression control such as life skill education (including decision making, problem-solving, self-awareness, coping with emotions and coping with stress) which support counseling were not provided by the intervention due to time limitation.

Evaluation of the study was done only on self-report of the participants without biological markers which were related to anxiety and depression such as cortisol, oxytocin and corticotrophin-releasing hormones.

Regarding the internal consistency reliability of the empathy section of the questionnaire, although the questions were revised as appropriate after the pilot test, the Cronbach alpha values were still low, 0.32 at the pilot test, 0.47 at baseline and 0.64 at post-intervention data collection.

Knowledge, self-efficacy and empathy statuses of the participants were not measured at follow-up data collection because patients were not available for a 40 minutes questions but had only on average of 15 minutes.

The intervention program of this study could only maintain the social functioning of the participants, although it was expected to be improved.

Peer counselors were not involved in the planning of the intervention to get their opinion on it.

Although the EORTC group suggested that the questionnaires were to be answered by the respondents by the self-administered method, these questionnaires were used as interviewer-administered in this study which might have introduced interviewer bias.

Although the participants of the intervention group had contacted their respective counselors by telephone during the treatment period, these telephone call logs and discussed contents were not recorded and monitored.

Baseline assessment of the peer counselors on their experience of counseling was not done before starting the training program. Therefore, after the training program, the counseling skill of the trainees was not able to compare with the baseline condition.

5.3 Conclusions

This study found that, at the baseline, most of the participants had a low score in knowledge about chemotherapy. The majority of the participants had fair scores in self-efficacy and empathy. Regarding anxiety and depression status, about 16% of the participants were categorized as anxious and depressed. Regarding the QOL by general questionnaire, global health status/QOL among the participants was fair. The cognitive functioning score was the highest among five functioning scores, and role functioning and emotional functioning scores were relatively low. Insomnia, fatigue, and pain were the most problematic symptoms and diarrhea and nausea and vomiting were the least problematic symptoms. Regarding the QOL by disease-specific questionnaire, body image score was the highest followed by future perspective, and the sexual functioning score was the lowest among four functioning scores. Regarding the symptoms, arm symptom score was the highest while upset by hair loss score was the lowest.

The intervention was effective in improving the knowledge about chemotherapy, self-efficacy and empathy status, and lessening the anxiety and depression status of the participants immediately after the intervention. Regarding the QOL, the intervention program was effective to improve global health status/QOL, physical functioning, role functioning, emotional functioning, cognitive functioning, social functioning, body image and future perspective of the participants. It was also effective to diminish the fatigue, and nausea and vomiting symptoms of the participants immediately after the intervention.

When the sustainability of the intervention was evaluated, this study found that the intervention program had a long-term effect on diminishing anxiety and depression status of the participants. It also had a long-term effect on improving emotional functioning and future perspective, and lowering the breast symptoms of the participants at two months after the intervention.

Therefore, the model of the intervention program of this study should be implemented among breast cancer patients in the future.

5.4 Recommendations

5.4.1 Recommendations for Program Implementation

All the peer supporters voluntarily participated in this study and willingly conducted the intervention program. Therefore, the activities of the peer support group should be sustained to future patients similar to the other countries where peer support groups are available in the reach of the patients.

Regarding the training of peer supporters, although 50 hours of training program has approved its effectiveness, more role-play and practical sessions could strengthen the capacity of peer supporters and the effect of the intervention.

Education booklets regarding side effects of chemotherapy and their management together with advice on healthy eating and advice on physical activity also contributed to the effectiveness of the intervention in this study, so that cancer patients receiving chemotherapy should be provided such kind of education materials before starting the treatment.

5.4.2 Recommendations for Future Research

Research with proper follow-up assessments among all study participants should be done to evaluate the sustainability of the effect of the intervention program on anxiety, depression, and QOL. Moreover, follow-up assessment should be done at longer intervals (such as six months or one year) after the intervention program.

An interventional study involving multiple intervention arms together with a control group should be conducted to find out and compare the effect of an individual component of the intervention on the study outcomes.

A study using effective interventions on anxiety and depression control such as life skill education (including decision making, problem-solving, self-awareness, coping with emotions and coping with stress) which support counseling should be conducted to strengthen the effect of the intervention.

Evaluation of the study should be done by self-report questionnaires together with biological markers that were related to anxiety and depression such as cortisol, oxytocin and corticotrophin-releasing hormones.

The empathy section of the questionnaire of this study should be adopted for future research only after being improved appropriately for the comprehensiveness.

The long-term effect of the intervention program on knowledge, self-efficacy and empathy statuses of the participants should be assessed at longer intervals (such as six months or one year) after the intervention.

The intervention program of this study could only maintain the social functioning of the participants, therefore in the future study, the intervention program should be revised for improving the social functioning of the patients.

Peer counselors should be involved in the planning of the intervention to get their opinion on it.

The EORTC QLQ-C30 and QLQ-BR23 questionnaire should be answered by the respondents by the self-administered method to avoid interviewer bias.

When the participants of the intervention group contact to their respective counselors by telephone during the treatment period, these telephone call logs and contents of discussion should be recorded and monitored.

Baseline assessment of the peer counselors on their experience of counseling should be done before starting the training program. By doing so, the counseling skill of the trainees after the training program can be compared with the baseline condition.

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APPENDICES

Appendix A

Informed Consent Form (Intervention Group)

This informed Consent Form is for female breast cancer patients who are receiving treatment at Shwe Yaung Hnin Si Cancer Foundation Clinic, and who we are inviting to participate in our research. The title of our research project is "Effect of Peer Support Intervention on Anxiety, Depression and Quality of Life among Female Breast Cancer Patients on Chemotherapy in Yangon, Myanmar."

You may provide the following information as shown below.

Name of Researcher: Dr. Min Thu Naung

Position: PhD (Public Health) Student at Chulalongkorn University, Thailand

Phone Number: 09254471535

E-mail: dr.minthunaung@gmail.com

This Informed Consent Form has two parts:

Part I: Information Sheet (to share information about the research with you)

Part II: Certificate of Consent (for signatures if you agree to take part)

You will be given a copy of this Informed Consent Form.

Part I: Information Sheet

(1) Introduction

I am Dr. Min Thu Naung, and I am attending PhD (Public Health) at College of Public Health Sciences, Chulalongkorn University, Thailand. I am doing research regarding anxiety, depression and quality of life among female breast cancer patients. I am going to give you information and invite you to be part of this research. Before you decide, you can talk to anyone you feel comfortable with about the research.

There may be some words that you do not understand. Please ask me to stop as we go through the information and I will take time to explain. If you have questions later, you can ask them of me, the study doctor or the staff.

(2) Purpose of the Research

The purpose of the research is to evaluate the Effect of Peer Support Intervention on Anxiety, Depression and Quality of Life among Female Breast Cancer Patients on Chemotherapy in Yangon, Myanmar. Breast cancer patients usually suffer anxiety and depression, and the diagnosis and treatment of breast cancer has negative effect on quality of life. Therefore, we would like to evaluate the effect of peer support intervention on anxiety, depression and quality of life among female breast cancer patients who are taking chemotherapy.

(3) Participant Selection

We are inviting all female breast cancer patients who register for chemotherapy to treat breast cancer at this clinic and who meet the eligibility criteria to participate in this research. We will recruit at least 74 participants for this research.

(4) Voluntary Participation

Your participation in this research is entirely voluntary. It is your choice whether to participate or not. Whether you choose to participate or not, all the services you receive at this clinic will continue and nothing will change.

(5) Procedures

You are invited to this study because you are eligible for the study. When you agree to participate in the study, consent form will need to be signed prior to any study assessments being performed.

After signing consent form, we will ask you the research questions. We feel that your experience can contribute much to this research.

The questions will include your age, ethnicity, marital status, education, number of children, employment status, menopausal status, smoking history, alcohol consumption history, family income, family history of breast cancer, family support, social support, the history and status of your disease, knowledge about chemotherapy, self-efficacy, empathy, consumer satisfaction, anxiety, depression and quality of life. In this questionnaire, there are some questions which will ask about your sexuality. Your weight and height will also be measured to get your body mass index (BMI). Your medical records will also be used to get the required information.

The participants of intervention group have to attend the intervention sessions including peer individual counseling (2 times) and peer group meeting (5 times), and will receive peer support by telephone (10 times). The first session of the peer individual counseling will be recorded by the audio recorder. Peer counseling sessions and peer group meeting will be held at the clinic. All these intervention sessions will be done during the treatment (taking chemotherapy) period.

Previously, although there were some research papers that tested the effect of peer support intervention on breast cancer patients, the results of those research papers contradicted to each other in outcomes of psychological status and quality of life. Moreover, the researcher could not find the previous research paper that tested the effect of peer support intervention in which individual counseling, group meeting and support by telephone were combined. Therefore, in this study, peer support intervention will be delivered to the participants in combination of these components.

The treatment for breast cancer will not be disturbed by adding this intervention program. Therefore, you will receive the peer support intervention, and there will be no difference in treatment procedure.

(6) Duration

The research will take place during your treatment (taking chemotherapy) period that is approximately 6 months. The interview will be performed 2 times; at the time of registration for chemotherapy and after completing chemotherapy. The expected duration of the interview will be about 40 minutes.

The participants of intervention group have to attend peer individual counseling (2 times) and peer group meeting (5 times). Each session will last for about 1 hour. You will also receive the support phone call from the peer facilitator for 10 times during your treatment period. You can also call the peer facilitator, peer group members or the researcher during the treatment period for more information.

(7) Risks

There will be no risk for participating in this research.

(8) Benefits

Your participation is likely to help us find the effect of peer support intervention on anxiety, depression and quality of life among female breast cancer patients who are taking chemotherapy. The findings of this study will be beneficial for breast cancer patients in our country in the future.

(9) Reimbursements

We will give you 5,000 Kyats for each time to pay for your loss of working time. You will not be given any other money or gifts to take part in this research.

(10) Confidentiality

The information that we collect from this research project will be kept confidential. No-one but the researchers will be able to see the information about you that will be collected during the research. Any information about you will have a code number on it instead of your name. Only the researchers will know what your code number is and these information will be kept with a lock and key. After completing the research, the information about you that will be collected during the research will be put away.

(11) Sharing the Results

The knowledge that we get from doing this research will be shared with you before it is made widely available to the public. Confidential information will not be shared. After completing the research, we will publish the results in international journals in order that other interested people may learn from our research.

(12) Right to Refuse or Withdraw

You do not have to take part in this research if you do not wish to do so. Refusing to participate will not affect your treatment at this clinic in any way. You will still have all the treatment that you would otherwise have at this clinic. You may stop participating in the research at any time that you wish without losing any of your rights as a patient at this clinic.

(13) Who to Contact

If you have any questions you may ask them now or later, even after the study has started. If you wish to ask questions later, you may contact Dr. Min Thu Naung, the researcher, PhD (Public Health) Student at Chulalongkorn University, Thailand, Tel: 09254471535, Email: dr.minthunaung@gmail.com.

This proposal has been reviewed and approved by Institutional Review Board, Defence Services Medical Research Centre, Directorate of Medical Services, Ministry of Defence.

Part II: Certificate of Consent

I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and any questions that I have asked have been answered to my satisfaction. I consent voluntarily to participate as a participant in this research.

Name of Participant _____

Signature of Participant _____

Date (day/month/year) _____

If illiterate

I have witnessed the accurate reading of the information sheet and consent form to the potential participant, and the individual has had the opportunity to ask questions. I confirm that the participant has given consent freely and voluntarily to participate in this research.

Name of witness _____ AND Thumb print of participant

Signature of witness _____

Date (day/month/year) _____

Statement by the researcher/person taking consent

I have accurately read or witnessed the accurate reading of the information sheet and consent form to the potential participant. I confirm that the participant was given an opportunity to ask questions about the study, and all the questions asked by the participant have been answered correctly and to the best of my ability. I confirm that the individual has given consent freely and voluntarily.

A copy of this Informed Consent Form has been provided to the participant.

Name of Researcher _____

Signature of Researcher _____

Date (day/month/year) _____

သုတေသနလုပ်ငန်းစဉ်တွင် ပါဝင်မည့်သူများအတွက် အသိပေးအကြောင်းကြား သဘောတူလွှာ

(ဖြစ်စဉ်တူဝေဒနာရှင်များ၏ ကူညီဖေးမပေးခြင်းကို ရရှိမည့်အဖွဲ့)

ဤအသိပေးအကြောင်းကြား သဘောတူလွှာသည် ကျွန်တော်တို့၏သုတေသနတွင်ပါဝင်ရန် ဖိတ်ခေါ် ထားသည့် ရွှေရောင်နှင်းဆီကင်ဆာဖောင်ဒေးရှင်းဆေးခန်းတွင် ဆေးကုသမည့် အမျိုးသမီး ရင်သားကင်ဆာ လူနာများအတွက် ဖြစ်ပါသည်။ ကျွန်တော်တို့သုတေသနလုပ်ငန်း၏ခေါင်းစဉ်မှာ မြန်မာနိုင်ငံ ရန်ကုန်မြို့ရှိ ကင်ဆာဆေးသွင်းကုသခြင်းဆောင်ရွက်မည့် အမျိုးသမီး ရင်သားကင်ဆာလူနာများတွင် စိတ်ပူပန်ခြင်း၊ စိတ်ဓာတ်ကျခြင်း နှင့် ဘဝအရည်အသွေးတို့အပေါ် ဖြစ်စဉ်တူဝေဒနာရှင်များမှ ကူညီဖေးမပေးခြင်း လုပ်ဆောင်ချက်၏ သက်ရောက်မှု ဖြစ်ပါသည်။

အောက်တွင်ဖော်ပြထားသော အချက်အလက်များကို သင့်အားအသိပေးပါမည်။

သုတေသီအမည် ဒေါက်တာမင်းသုနောင်

အလုပ်အကိုင် ပြည်သူ့ကျန်းမာရေးပါရဂူဘွဲ့ကျောင်းသား၊ ချူလာလောင်ကွန်းတက္ကသိုလ်၊ ထိုင်းနိုင်ငံ

ဖုန်းနံပါတ် ၀၉၂၅၄၇၇၁၅၂၅

အီးမေးလ် dr.minthunaung@gmail.com

အသိပေးအကြောင်းကြား သဘောတူလွှာတွင် အပိုင်းနှစ်ပိုင်းပါဝင်ပါသည်-

အပိုင်း(၁) အသိပေးအကြောင်းကြားလွှာ (သုတေသနနှင့်သက်ဆိုင်သော အကြောင်းအရာများကို သင့်အားအသိပေးရန်)

အပိုင်း(၂) သုတေသနတွင်ပါဝင်ရန်သဘောတူလွှာ (ပါဝင်ရန်သဘောတူလျှင် လက်မှတ်ရေးထိုးရန်)

ဤအသိပေးအကြောင်းကြား သဘောတူလွှာမိတ္တူတစ်စုံကို သင့်အားပေးပါမည်။

အပိုင်း(၁) အသိပေးအကြောင်းကြားလွှာ

(၁) နိဒါန်း

ကျွန်တော်သည် ထိုင်းနိုင်ငံ၊ ချူလာလောင်ကွန်းတက္ကသိုလ်တွင် ပြည်သူ့ကျန်းမာရေးပါရဂူဘွဲ့သင်တန်း တက်ရောက်နေသော ဒေါက်တာမင်းသုနောင် ဖြစ်ပါသည်။ ကျွန်တော်သည် အမျိုးသမီး ရင်သားကင်ဆာ လူနာများတွင် စိတ်ပူပန်ခြင်း၊ စိတ်ဓာတ်ကျခြင်း နှင့် ဘဝအရည်အသွေးတို့နှင့်ပါတ်သက်သည့် သုတေသနကို ဆောင်ရွက်မည် ဖြစ်ပါသည်။ ကျွန်တော်သည် ဤသုတေသနနှင့်ပါတ်သက်သော အကြောင်းအရာများကို ရှင်းလင်းပြောကြားမည်ဖြစ်ပြီး သင့်ကို ဤသုတေသနတွင်ပါဝင်ရန် ဖိတ်ခေါ်ပါမည်။ သုတေသနတွင်ပါဝင်ရန် မဆုံးဖြတ်မီ သုတေသနအကြောင်းကို သင်ဆွေးနွေးလိုသူ မည်သူနှင့်မဆို ဆွေးနွေးနိုင်ပါသည်။

သင်မရှင်းလင်းသောအချက်များရှိပါက ယခုချက်ချင်းမေးမြန်းနိုင်ပါသည်။ အချိန်ယူ၍ ရှင်းပြပါမည်။ နောက်ထပ်မေးမြန်းလိုသည်များရှိပါကလည်း ကျွန်တော့်ကိုဖြစ်စေ၊ သုတေသနအဖွဲ့မှ ဆရာဝန်များကိုဖြစ်စေ၊ သုတေသနအဖွဲ့မှ ဝန်ထမ်းများကိုဖြစ်စေ မေးမြန်းနိုင်ပါသည်။

(၂) သုတေသန၏ရည်ရွယ်ချက်

သုတေသန၏ရည်ရွယ်ချက်မှာ မြန်မာနိုင်ငံ ရန်ကုန်မြို့ရှိ ကင်ဆာဆေးသွင်းကုသခြင်းဆောင်ရွက်မည့် အမျိုးသမီး ရင်သားကင်ဆာလူနာများတွင် စိတ်ပူပန်ခြင်း၊ စိတ်ဓာတ်ကျခြင်း နှင့် ဘဝအရည်အသွေးတို့အပေါ် ဖြစ်စဉ်တူဝေဒနာရှင်များမှ ကူညီဖေးမပေးခြင်း လုပ်ဆောင်ချက်၏ သက်ရောက်မှုကို ဖော်ထုတ်ရန်ဖြစ်ပါသည်။ ရင်သားကင်ဆာလူနာများတွင် စိတ်ပူပန်ခြင်းနှင့် စိတ်ဓာတ်ကျခြင်းတို့ ခံစားရလေ့ရှိပြီး ရင်သားကင်ဆာရောဂါ စစ်ဆေးတွေ့ရှိမှုနှင့် ကုသမှုတို့သည် ဘဝအရည်အသွေးအပေါ်တွင် ဆိုးကျိုးသက်ရောက်မှုရှိတတ်ပါသည်။ ထို့ကြောင့် ကျွန်တော်တို့သည် ကင်ဆာဆေးသွင်းကုသခြင်းဆောင်ရွက်မည့် အမျိုးသမီး ရင်သားကင်ဆာ လူနာများတွင် စိတ်ပူပန်ခြင်း၊ စိတ်ဓာတ်ကျခြင်း နှင့် ဘဝအရည်အသွေးတို့အပေါ် ဖြစ်စဉ်တူဝေဒနာရှင်များမှ ကူညီဖေးမပေးခြင်း လုပ်ဆောင်ချက်၏ သက်ရောက်မှုကို ဖော်ထုတ်လိုပါသည်။

(၃) သုတေသနတွင်ပါဝင်မည့်သူများကိုရွေးချယ်ခြင်း

ဤဆေးခန်းတွင် ရင်သားကင်ဆာရောဂါကို ကင်ဆာဆေးသွင်းကုသရန်စာရင်းပေးပြီး သုတေသနတွင် ပါဝင်ရန် သတ်မှတ်ချက်များနှင့်ကိုက်ညီသူ အမျိုးသမီးရင်သားကင်ဆာလူနာများအားလုံးကို သုတေသနတွင်ပါဝင်ရန် ဖိတ်ခေါ်ပါသည်။ ဤသုတေသနတွင် ပါဝင်မည့်သူများမှာ အနည်းဆုံး ၇၄ ဦးဖြစ်ပါသည်။

(၄) သုတေသနတွင် မိမိဆန္ဒအလျောက်ပါဝင်ခြင်း

ဤသုတေသနတွင်ပါဝင်ခြင်းမှာ သင်၏ဆန္ဒအလျောက်သာဖြစ်ပါသည်။ ဤသုတေသနတွင်ပါဝင်ခြင်း သို့မဟုတ် မပါဝင်ခြင်းမှာ သင်၏ရွေးချယ်မှုသာဖြစ်ပါသည်။ သုတေသနတွင်ပါဝင်သည်ဖြစ်စေ၊ မပါဝင်သည်ဖြစ်စေ၊ ဤဆေးခန်းတွင် သင်ရရှိမည့် ကျန်းမာရေးဝန်ဆောင်မှုများကို ဆက်လက်ရရှိမည်ဖြစ်ပြီး ပြောင်းလဲမှုတစုံတရာမရှိပါ။

(၅) သုတေသနဆောင်ရွက်မည့်အစီအစဉ်

သင်သည် ဤသုတေသနတွင်ပါဝင်ရန် သတ်မှတ်ချက်များနှင့်ကိုက်ညီသောကြောင့် သုတေသနတွင်ပါဝင်ရန် သင့်ကိုဖိတ်ခေါ်ပါသည်။ သင်သည် သုတေသနတွင်ပါဝင်ရန်သဘောတူပါက မည်သည့်ဆောင်ရွက်ချက်မျှ မဆောင်ရွက်မီတွင် သုတေသနတွင်ပါဝင်ရန်သဘောတူလွှာကို လက်မှတ်ရေးထိုးရန် လိုအပ်ပါသည်။

ထို့နောက် ကျွန်တော်တို့က သင့်ကို သုတေသနမေးခွန်းများ မေးပါမည်။ သင်၏အတွေ့အကြုံများသည် ဤသုတေသနအတွက် များစွာအကျိုးရှိစေမည်ဟု ယုံကြည်ပါသည်။

သုတေသနမေးခွန်းများတွင် သင်၏ အသက်၊ လူမျိုး၊ အိမ်ထောင်ရှိ/မရှိ၊ ပညာရေး၊ သားသမီးဦးရေ၊ အလုပ်အကိုင်အခြေအနေ၊ သွေးဆုံးခြင်းရှိ/မရှိ၊ ဆေးလိပ်သောက်သုံးသည့်ရာဇဝင်၊ အရက်သောက်သုံးသည့်ရာဇဝင်၊ မိသားစုဝင်ငွေ၊ မိသားစုအတွင်း ရင်သားကင်ဆာဖြစ်ပွားခဲ့မှုရာဇဝင်၊ မိသားစု၏ ကူညီဖေးမထောက်ပံ့ပေးမှုရှိ/မရှိ၊ လူမှုရေးအရ ကူညီဖေးမထောက်ပံ့ပေးမှု ရှိ/မရှိ၊ သင်၏ရောဂါရာဇဝင်နှင့် အခြေအနေ၊ ကင်ဆာဆေးသွင်း ကုသခြင်းနှင့် ပါတ်သက်သည့် ဗဟုသုတ၊ ကိုယ်တိုင်အစွမ်း၊ စာနာစိတ်၊ သုံးစွဲသူ၏စိတ်ကျေနပ်မှု၊ စိတ်ပူပန်ခြင်း၊ စိတ်ဓာတ်ကျခြင်း၊ ဘဝအရည်အသွေးတို့ ပါဝင်ပါသည်။ ထိုမေးခွန်းများတွင် သင်၏လိင်မှုဆိုင်ရာအကြောင်း မေးမြန်းမည့် မေးခွန်းအချို့လည်း ပါဝင်ပါသည်။ သင်၏ ခန္ဓာကိုယ်ထုထည်အညွှန်းကိန်းကိုရရှိရန် သင်၏

ကိုယ်အလေးချိန်နှင့် အရပ်အမြင့်တို့ကိုလည်း တိုင်းတာပါမည်။ လိုအပ်သောအချက်အလက်များရရှိရန် သင်၏ ဆေးမှတ်တမ်းများကိုလည်း အသုံးပြုပါမည်။

ဖြစ်စဉ်တူဝေဒနာရှင်များမှ ကူညီဖေးမပေးခြင်းလုပ်ဆောင်ချက်များကိုရရှိမည့် ပါဝင်သူများသည် ထိုလုပ်ဆောင်ချက်များ ဆောင်ရွက်မည့်အချိန်များသို့ တက်ရောက်ရပါမည်။ ကူညီဖေးမပေးခြင်း လုပ်ဆောင်ချက် များတွင် သုတေသနတွင်ပါဝင်သူများကို ဖြစ်စဉ်တူဝေဒနာရှင်များမှ တစ်ဦးချင်းဆွေးနွေးခြင်း (၂)ကြိမ်၊ အဖွဲ့လိုက်စုပေါင်းဆွေးနွေးခြင်း (၅)ကြိမ် ဆောင်ရွက်မည်ဖြစ်ပြီး တယ်လီဖုန်းဖြင့် (၁၀)ကြိမ်ဆက်သွယ်၍ ကူညီဖေးမ ပေးခြင်းကို ဆောင်ရွက်ပါမည်။ တစ်ဦးချင်းဆွေးနွေးခြင်း (၂)ကြိမ်အနက်မှ ပထမအကြိမ်ကို အသံဖမ်းယူပါမည်။ တစ်ဦးချင်းဆွေးနွေးခြင်းနှင့် အဖွဲ့လိုက်စုပေါင်းဆွေးနွေးခြင်းတို့ကို ဆေးခန်းတွင် ဆောင်ရွက်ပါမည်။ ဤလုပ်ဆောင်ချက်များသည် ကင်ဆာဆေးသွင်းကုသခြင်းဆောင်ရွက်သည့် အချိန်ကာလ အတွင်းတွင်သာ ပြီးစီးမည်ဖြစ်ပါသည်။

ယခင်က ရင်သားကင်ဆာဝေဒနာရှင်များတွင် ဖြစ်စဉ်တူဝေဒနာရှင်များ၏ ကူညီဖေးမပေးခြင်း လုပ်ဆောင်မှု၏ သက်ရောက်မှုကို စမ်းသပ်သည့် သုတေသနစာတမ်းအချို့ရှိခဲ့သော်လည်း စိတ်ခံစားမှုအခြေအနေနှင့် ဘဝအရည်အသွေးတို့နှင့် ပါတ်သက်၍ ထိုသုတေသနစာတမ်းတို့၏ တွေ့ရှိချက်များမှာ တစ်ခုနှင့်တစ်ခု တူညီခြင်းမရှိပဲ ဆန့်ကျင်လျက်ရှိကြောင်း တွေ့ရှိရပါသည်။ ထို့အပြင် သုတေသီအနေဖြင့် တစ်ဦးချင်းဆွေးနွေးခြင်း၊ အဖွဲ့လိုက်စုပေါင်းဆွေးနွေးခြင်းနှင့် တယ်လီဖုန်းဖြင့်အားပေးကူညီခြင်းတို့ ပေါင်းစပ်ထားသည့် ဖြစ်စဉ်တူဝေဒနာရှင် များမှ ကူညီဖေးမပေးခြင်း လုပ်ဆောင်မှု၏ သက်ရောက်မှုကိုစမ်းသပ်သည့် သုတေသနစာတမ်းကို ရှာဖွေတွေ့ရှိခြင်း မရှိသေးပါ။ ထို့ကြောင့် ယခုဆောင်ရွက်မည့် သုတေသနတွင် ထိုအပိုင်းများကိုပေါင်းစပ်၍ ဖြစ်စဉ်တူဝေဒနာရှင် များ၏ ကူညီဖေးမပေးခြင်းကို ဆောင်ရွက်ပါမည်။

ဤအစီအစဉ်ကို ဆောင်ရွက်ခြင်းကြောင့် ရင်သားကင်ဆာဆေးသွင်းကုသမှုကို အနှောင့်အယှက် ဖြစ်စေမည်မဟုတ်ပါ။ ထို့ကြောင့် သင့်အနေဖြင့် ဖြစ်စဉ်တူဝေဒနာရှင်များ၏ ကူညီဖေးမပေးခြင်းကို ရရှိမည်ဖြစ်ပြီး ရင်သားကင်ဆာကုသမှုလုပ်ငန်းစဉ်တွင် မည်သည့်ကွဲပြားခြားနားမှုမျှ ရှိမည်မဟုတ်ပါ။

(၆) သုတေသနကြာမြင့်မည့်အချိန်ကာလ

ဤသုတေသနသည် ကင်ဆာဆေးသွင်းကုသခြင်းဆောင်ရွက်သည့် အချိန်ကာလအတွင်းတွင် ဆောင်ရွက်မည်ဖြစ်ပြီး ခန့်မှန်းခြေအားဖြင့် (၆)လခန့်ဖြစ်ပါသည်။ သုတေသနမေးခွန်းများ မေးမြန်းခြင်းကို ကင်ဆာဆေးသွင်းကုသခြင်း အတွက် စာရင်းပေးသွင်းချိန်တွင် (၁)ကြိမ်နှင့် ကင်ဆာဆေးသွင်းကုသခြင်းပြီးစီးချိန်တွင် (၁)ကြိမ် စုစုပေါင်း(၂)ကြိမ် ဆောင်ရွက်ပါမည်။ သုတေသနမေးခွန်းများမေးမြန်းခြင်းအတွက် ခန့်မှန်းကြာမြင့်ချိန်မှာ မိနစ်(၄၀)ခန့်ဖြစ်ပါသည်။

ဖြစ်စဉ်တူဝေဒနာရှင်များမှ ကူညီဖေးမပေးခြင်းလုပ်ဆောင်ချက်များကိုရရှိမည့် ပါဝင်သူများသည် တစ်ဦးချင်းဆွေးနွေးခြင်း (၂)ကြိမ်၊ အဖွဲ့လိုက်စုပေါင်းဆွေးနွေးခြင်း (၅)ကြိမ် ဆောင်ရွက်မည့်အချိန်များသို့ တက်ရောက်ရပါမည်။ (၁)ကြိမ်ဆွေးနွေးချိန်မှာ (၁)နာရီခန့်ကြာမြင့်ပါမည်။ သင်၏ဆေးကုသမှုကာလအတွင်းတွင် ဖြစ်စဉ်တူဝေဒနာရှင်များမှ တယ်လီဖုန်းဖြင့် (၁၀)ကြိမ်ဆက်သွယ်၍ ကူညီဖေးမပေးခြင်းကို ဆောင်ရွက်ပါမည်။ သင့်အနေဖြင့်လည်း ဆေးကုသမှုကာလအတွင်းတွင် ထပ်မံသိရှိလိုသည်များရှိပါက ဖြစ်စဉ်တူဝေဒနာရှင်များ ထံသို့လည်းကောင်း၊ အဖွဲ့လိုက်စုပေါင်းဆွေးနွေးခဲ့သည့် အဖွဲ့ဝင်များထံသို့လည်းကောင်း၊ သုတေသီထံသို့ လည်းကောင်း ဖုန်းခေါ်ဆိုနိုင်ပါသည်။

(၇) အန္တရာယ်များ

ဤသုတေသနတွင်ပါဝင်ခြင်းအတွက် အန္တရာယ်ဖြစ်နိုင်မှုအခြေအနေမရှိပါ။

(၈) အကျိုးကျေးဇူးများ

ဤသုတေသနတွင် သင်ပါဝင်ခြင်းသည် ကင်ဆာဆေးသွင်းကုသခြင်းဆောင်ရွက်မည့် အမျိုးသမီးရင်သားကင်ဆာလူနာများတွင် စိတ်ပူပန်ခြင်း၊ စိတ်ဓာတ်ကျခြင်း နှင့် ဘဝအရည်အသွေးတို့အပေါ် ဖြစ်စဉ်တူဝေဒနာရှင်များမှ ကူညီဖေးမပေးခြင်းလုပ်ဆောင်ချက်၏ သက်ရောက်မှုကိုဖော်ထုတ်ရန် ကူညီပေးခြင်း ဖြစ်ပါသည်။ ဤသုတေသန၏တွေ့ရှိချက်များသည် အနာဂတ်တွင် ကျွန်တော်တို့နိုင်ငံမှ ရင်သားကင်ဆာ လူနာများအတွက် အကျိုးကျေးဇူးများစွာ ဖြစ်ထွန်းစေမည်ဖြစ်ပါသည်။

(၉) ထောက်ပံ့ပေးမှု

ဤသုတေသနတွင်ပါဝင်ခြင်းကြောင့် ဆုံးရှုံးသွားသော သင်၏အလုပ်ချိန်များအတွက် တစ်ကြိမ်လျှင် (၅၀၀၀)ကျပ် ပြန်လည်ထောက်ပံ့ပေးပါမည်။ ထိုမှအပ အခြားသောထောက်ပံ့ပေးမှုများ၊ လက်ဆောင်များ ရရှိမည်မဟုတ်ပါ။

(၁၀) သတင်းအချက်အလက်များ လျှို့ဝှက်ထားရှိမှု

ဤသုတေသနမှ စုဆောင်းရရှိသောအချက်အလက်များကို မသက်ဆိုင်သူများ မသိရှိစေရန် ဆောင်ရွက်ပါမည်။ ဤသုတေသနမှ စုဆောင်းရရှိသော သင်၏အချက်အလက်များကို သုတေသီများမှလွဲ၍ အခြားမည်သူမျှ ကြည့်ရှုခွင့်ရမည်မဟုတ်ပါ။ သင်၏မည်သည့်အချက်အလက်ကိုမဆို သင်၏အမည်အစား ကုဒ်နံပါတ်တစ်ခုဖြင့် မှတ်သားပါမည်။ သင်၏ကုဒ်နံပါတ်ကို သုတေသီများကသာ သိရှိမည်ဖြစ်ပြီး ထိုအချက်အလက်များကို သော့ခတ်၍ သိမ်းဆည်းပါမည်။ ဤသုတေသနမှ စုဆောင်းရရှိသော သင်၏ အချက်အလက်များကို သုတေသနပြီးစီးပါက ဖျက်ဆီးပစ်ပါမည်။

(၁၁) သုတေသနတွေ့ရှိချက်များကို တင်ပြခြင်း

ဤသုတေသန၏တွေ့ရှိချက်များကို အများပြည်သူထံသို့ ကျယ်ပြန့်စွာတင်ပြခြင်းမပြုမီ သင့်ကိုရှင်းလင်း ပြောကြားပါမည်။ လုံခြုံစွာသိမ်းဆည်းထားရမည့် အချက်အလက်များကို တင်ပြခြင်းပြုမည်မဟုတ်ပါ။ သုတေသနပြီးစီးပါက သုတေသနတွေ့ရှိချက်များကို အခြားသောစိတ်ပါဝင်စားသူများ လေ့လာနိုင်စေရန်အတွက် နိုင်ငံတကာဂျာနယ်များတွင် တင်ပြပါမည်။

(၁၂) ဤသုတေသနလုပ်ငန်းစဉ်တွင် ပါဝင်ရန် ငြင်းဆိုခွင့်၊ ရပ်ဆိုင်းနိုင်ခွင့်

ဤသုတေသနလုပ်ငန်းစဉ်တွင် ပါဝင်လိုခြင်းမရှိပါက မပါဝင်ပဲနေနိုင်ပါသည်။ သုတေသနတွင် မပါဝင်ခြင်းသည် ဤဆေးခန်းရှိ သင်၏ဆေးကုသမှုကို မည်သည့်သက်ရောက်မှုမျှရှိမည်မဟုတ်ပါ။ သင့်အနေဖြင့် ဤဆေးခန်းမှရရှိမည့် ဆေးကုသမှုအားလုံးကို ဆက်လက်ရရှိမည်ဖြစ်ပါသည်။ ဤသုတေသနလုပ်ငန်းစဉ်တွင် ပါဝင်ခြင်းကို သင်၏ဆန္ဒအရ အချိန်မရွေးရပ်ဆိုင်းနိုင်ပြီး ဤဆေးခန်းတွင် လူနာတစ်ဦးအနေဖြင့် သင်၏ဆေးကုသမှု အခွင့်အရေးများ ဆုံးရှုံးခြင်းမရှိပါ။

(၁၃) ဆက်သွယ်ရန်

သင်မေးမြန်းလိုသည်များရှိပါက ယခုဖြစ်စေ၊ နောက်ပိုင်းတွင်ဖြစ်စေ၊ သုတေသနစတင်ဆောင်ရွက်နေချိန်တွင်ဖြစ်စေ မေးမြန်းနိုင်ပါသည်။ နောက်ပိုင်းတွင် မေးမြန်းလိုသည်များရှိပါက

ဒေါက်တာမင်းသုနောင်၊ သုတေသီ၊ ပြည်သူ့ကျန်းမာရေးပါရဂူဘွဲ့ကျောင်းသား၊ ဖုန်းနံပါတ် ၀၉၂၅၄၄၇၁၅၃၃၊ အီးမေးလ် dr.minthunaung@gmail.com သို့ ဆက်သွယ်နိုင်ပါသည်။

ဤသုတေသနအဆိုပြုမူကြမ်းကို ကျင့်ဝတ်ဆိုင်ရာစိစစ်ရေးဘုတ်အဖွဲ့၊ တပ်မတော်ဆေးသုတေသနတပ်မှ စိစစ် ခွင့်ပြုပြီးဖြစ်ပါသည်။

အပိုင်း(၂) သုတေသနတွင်ပါဝင်ရန်သဘောတူလွှာ

ကျွန်မသည် ရှေ့တွင်ဖော်ပြထားသော အကြောင်းအရာများကို ဖတ်ရှုပြီးဖြစ်ပါသည် (သို့မဟုတ်) ကျွန်မကို ဖတ်ရှုပြပြီးဖြစ်ပါသည်။ ကျွန်မသည် ဤသုတေသနနှင့်ပါတ်သက်၍ မေးခွန်းများမေးမြန်းခွင့်ရရှိခဲ့ပြီးဖြစ်ပါသည်။ ကျွန်မမေးမြန်းခဲ့သောမေးခွန်းများကိုလည်း ကျွန်မကျေနပ်သည်အထိ ဖြေဆိုပေးခဲ့ပြီးဖြစ်ပါသည်။ ကျွန်မသည် ဤသုတေသနတွင်ပါဝင်ရန် မိမိ၏ဆန္ဒအလျောက် သဘောတူပါသည်။

ပါဝင်သူ၏အမည် _____

ပါဝင်သူ၏လက်မှတ် _____

ရက်စွဲ (ရက်၊ လ၊ နှစ်) _____

စာမတတ်သူဖြစ်လျှင်

ကျွန်တော်/ကျွန်မသည် ဤသုတေသနလုပ်ငန်းစဉ်တွင် ပါဝင်မည့်သူအား အသိပေးအကြောင်းကြားလွှာနှင့် သဘောတူလွှာတို့ကို သေချာစွာဖတ်ပြပြီးစီးကြောင်းနှင့် ပါဝင်မည့်သူသည် မေးခွန်းများမေးမြန်းခွင့် ရရှိခဲ့ကြောင်း သက်သေပြုပါသည်။ ပါဝင်မည့်သူသည် သူ၏ဆန္ဒအလျောက် ဤသုတေသနတွင်ပါဝင်ရန် လွတ်လပ်စွာ သဘောတူခြင်းဖြစ်ကြောင်း အတည်ပြုပါသည်။

သက်သေ၏အမည် _____

ပါဝင်မည့်သူ၏လက်ဗွေ

သက်သေ၏လက်မှတ် _____

ရက်စွဲ (ရက်၊ လ၊ နှစ်) _____

ဤသုတေသနလုပ်ငန်းစဉ်တွင် ပါဝင်မည့်သူသည် အသိပေးအကြောင်းကြားလွှာနှင့် သဘောတူလွှာတို့ကို သေချာစွာဖတ်ရှုပြီးဖြစ်ပါသည် (သို့မဟုတ်) ကျွန်တော်က ပါဝင်မည့်သူကို သေချာစွာဖတ်ပြပြီးဖြစ်ပါသည်။ ပါဝင်မည့်သူသည် ဤသုတေသနနှင့်ပါတ်သက်၍ မေးခွန်းများမေးမြန်းခွင့်ရရှိခဲ့ပြီးဖြစ်ကြောင်း အတည်ပြုပါသည်။ မေးမြန်းခဲ့သောမေးခွန်းများကိုလည်း ကျွန်တော်က အကောင်းဆုံးကြိုးစား၍ မှန်ကန်စွာ ဖြေဆိုပေးခဲ့ပြီးဖြစ်ပါသည်။ ပါဝင်မည့်သူသည် သူ၏ဆန္ဒအလျောက် ဤသုတေသနတွင်ပါဝင်ရန် လွတ်လပ်စွာ သဘောတူခြင်းဖြစ်ကြောင်း အတည်ပြုပါသည်။

ဤအသိပေးအကြောင်းကြား သဘောတူလွှာမိတ္တူတစ်စုံကို ပါဝင်မည့်သူအား ပေးအပ်ပြီးဖြစ်ပါသည်။

သုတေသီ၏အမည် _____

သုတေသီ၏လက်မှတ် _____

ရက်စွဲ (ရက်၊ လ၊ နှစ်) _____

Appendix B

Informed Consent Form (Control Group)

This informed Consent Form is for female breast cancer patients who are receiving treatment at Shwe Yaung Hnin Si Cancer Foundation Clinic, and who we are inviting to participate in our research. The title of our research project is "Effect of Peer Support Intervention on Anxiety, Depression and Quality of Life among Female Breast Cancer Patients on Chemotherapy in Yangon, Myanmar."

You may provide the following information as shown below.

Name of Researcher: Dr. Min Thu Naung

Position: PhD (Public Health) Student at Chulalongkorn University, Thailand

Phone Number: 09254471535

E-mail: dr.minthunaung@gmail.com

This Informed Consent Form has two parts:

Part I: Information Sheet (to share information about the research with you)

Part II: Certificate of Consent (for signatures if you agree to take part)

You will be given a copy of this Informed Consent Form.

Part I: Information Sheet

(1) Introduction

I am Dr. Min Thu Naung, and I am attending PhD (Public Health) at College of Public Health Sciences, Chulalongkorn University, Thailand. I am doing research regarding anxiety, depression and quality of life among female breast cancer patients. I am going to give you information and invite you to be part of this research. Before you decide, you can talk to anyone you feel comfortable with about the research.

There may be some words that you do not understand. Please ask me to stop as we go through the information and I will take time to explain. If you have questions later, you can ask them of me, the study doctor or the staff.

(2) Purpose of the Research

The purpose of the research is to assess the Anxiety, Depression and Quality of Life status among Female Breast Cancer Patients on Chemotherapy in Yangon, Myanmar. Breast cancer patients usually suffer anxiety and depression, and the diagnosis and treatment of breast cancer has negative effect on quality of life. Therefore, we would like to assess anxiety, depression and quality of life status among female breast cancer patients who are taking chemotherapy.

(3) Participant Selection

We are inviting all female breast cancer patients who register for chemotherapy to treat breast cancer at this clinic and who meet the eligibility criteria to participate in this research. We will recruit at least 74 participants for this research.

(4) Voluntary Participation

Your participation in this research is entirely voluntary. It is your choice whether to participate or not. Whether you choose to participate or not, all the services you receive at this clinic will continue and nothing will change.

(5) Procedures

You are invited to this study because you are eligible for the study. When you agree to participate in the study, consent form will need to be signed prior to any study assessments being performed.

After signing consent form, we will ask you the research questions. We feel that your experience can contribute much to this research.

The questions will include your age, ethnicity, marital status, education, number of children, employment status, menopausal status, smoking history, alcohol consumption history, family income, family history of breast cancer, family support, social support, the history and status of your disease, knowledge about chemotherapy,

self-efficacy, empathy, consumer satisfaction, anxiety, depression and quality of life. In this questionnaire, there are some questions which will ask about your sexuality. Your weight and height will also be measured to get your body mass index (BMI). Your medical records will also be used to get the required information.

(6) Duration

The research will take place during your treatment (taking chemotherapy) period that is approximately 6 months. The interview will be performed 2 times; at the time of registration for chemotherapy and after completing chemotherapy. The expected duration of the interview will be about 40 minutes.

(7) Risks

There will be no risk for participating in this research.

(8) Benefits

Your participation is likely to help us find the anxiety, depression and quality of life status among female breast cancer patients who are taking chemotherapy. The findings of this study will be beneficial for breast cancer patients in our country in the future.

(9) Reimbursements

We will give you 5,000 Kyats for each time to pay for your loss of working time. You will not be given any other money or gifts to take part in this research.

(10) Confidentiality

The information that we collect from this research project will be kept confidential. No-one but the researchers will be able to see the information about you that will be collected during the research. Any information about you will have a code number on it instead of your name. Only the researchers will know what your code number is and these information will be kept with a lock and key. After completing the research, the information about you that will be collected during the research will be put away.

(11) Sharing the Results

The knowledge that we get from doing this research will be shared with you before it is made widely available to the public. Confidential information will not be shared. After completing the research, we will publish the results in international journals in order that other interested people may learn from our research.

(12) Right to Refuse or Withdraw

You do not have to take part in this research if you do not wish to do so. Refusing to participate will not affect your treatment at this clinic in any way. You will still have all the treatment that you would otherwise have at this clinic. You may stop participating in the research at any time that you wish without losing any of your rights as a patient at this clinic.

(13) Who to Contact

If you have any questions you may ask them now or later, even after the study has started. If you wish to ask questions later, you may contact Dr. Min Thu Naung, the researcher, PhD (Public Health) Student at Chulalongkorn University, Thailand, Tel: 09254471535, Email: dr.minthunaung@gmail.com.

This proposal has been reviewed and approved by Institutional Review Board, Defence Services Medical Research Centre, Directorate of Medical Services, Ministry of Defence.

Part II: Certificate of Consent

I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and any questions that I have asked have been answered to my satisfaction. I consent voluntarily to participate as a participant in this research.

Name of Participant _____

Signature of Participant _____

Date (day/month/year) _____

If illiterate

I have witnessed the accurate reading of the information sheet and consent form to the potential participant, and the individual has had the opportunity to ask questions. I confirm that the participant has given consent freely and voluntarily to participate in this research.

Name of witness _____ AND Thumb print of participant

Signature of witness _____

Date (day/month/year) _____

Statement by the researcher/person taking consent

I have accurately read or witnessed the accurate reading of the information sheet and consent form to the potential participant. I confirm that the participant was given an opportunity to ask questions about the study, and all the questions asked by the participant have been answered correctly and to the best of my ability. I confirm that the individual has given consent freely and voluntarily.

A copy of this Informed Consent Form has been provided to the participant.

Name of Researcher _____

Signature of Researcher _____

Date (day/month/year) _____

သုတေသနလုပ်ငန်းစဉ်တွင် ပါဝင်မည့်သူများအတွက် အသိပေးအကြောင်းကြား သဘောတူလွှာ

(နို့ဉ်းယှဉ်မည့်အဖွဲ့)

ဤအသိပေးအကြောင်းကြား သဘောတူလွှာသည် ကျွန်တော်တို့၏သုတေသနတွင်ပါဝင်ရန် ဖိတ်ခေါ် ထားသည့် ရွှေရောင်နှင်းဆီကင်ဆာဖောင်ဒေးရှင်းဆေးခန်းတွင် ဆေးကုသမည့် အမျိုးသမီး ရင်သားကင်ဆာ လူနာများအတွက် ဖြစ်ပါသည်။ ကျွန်တော်တို့သုတေသနလုပ်ငန်း၏ခေါင်းစဉ်မှာ မြန်မာနိုင်ငံ ရန်ကုန်မြို့ရှိ ကင်ဆာဆေးသွင်းကုသခြင်းဆောင်ရွက်မည့် အမျိုးသမီး ရင်သားကင်ဆာလူနာများတွင် စိတ်ပူပန်ခြင်း၊ စိတ်ဓာတ်ကျခြင်း နှင့် ဘဝအရည်အသွေးတို့အပေါ် ဖြစ်စဉ်တူဝေဒနာရှင်များမှ ကူညီဖေးမပေးခြင်း လုပ်ဆောင်ချက်၏ သက်ရောက်မှု ဖြစ်ပါသည်။

အောက်တွင်ဖော်ပြထားသော အချက်အလက်များကို သင့်အားအသိပေးပါမည်။

သုတေသီအမည် ဒေါက်တာမင်းသုနောင်

အလုပ်အကိုင် ပြည်သူ့ကျန်းမာရေးပါရဂူဘွဲ့ကျောင်းသား၊ ချူလာလောင်ကွန်းတက္ကသိုလ်၊ ထိုင်းနိုင်ငံ

ဖုန်းနံပါတ် ၀၉၂၅၄၇၇၁၅၂၅

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အသိပေးအကြောင်းကြား သဘောတူလွှာတွင် အပိုင်းနှစ်ပိုင်းပါဝင်ပါသည်-

အပိုင်း(၁) အသိပေးအကြောင်းကြားလွှာ (သုတေသနနှင့်သက်ဆိုင်သော အကြောင်းအရာများကို သင့်အားအသိပေးရန်)

အပိုင်း(၂) သုတေသနတွင်ပါဝင်ရန်သဘောတူလွှာ (ပါဝင်ရန်သဘောတူလျှင် လက်မှတ်ရေးထိုးရန်)

ဤအသိပေးအကြောင်းကြား သဘောတူလွှာမိတ္တူတစ်စုံကို သင့်အားပေးပါမည်။

အပိုင်း(၁) အသိပေးအကြောင်းကြားလွှာ

(၁) နိဒါန်း

ကျွန်တော်သည် ထိုင်းနိုင်ငံ၊ ချူလာလောင်ကွန်းတက္ကသိုလ်တွင် ပြည်သူ့ကျန်းမာရေးပါရဂူဘွဲ့သင်တန်း တက်ရောက်နေသော ဒေါက်တာမင်းသုနောင် ဖြစ်ပါသည်။ ကျွန်တော်သည် အမျိုးသမီး ရင်သားကင်ဆာ လူနာများတွင် စိတ်ပူပန်ခြင်း၊ စိတ်ဓာတ်ကျခြင်း နှင့် ဘဝအရည်အသွေးတို့နှင့်ပါတ်သက်သည့် သုတေသနကို ဆောင်ရွက်မည် ဖြစ်ပါသည်။ ကျွန်တော်သည် ဤသုတေသနနှင့်ပါတ်သက်သော အကြောင်းအရာများကို ရှင်းလင်းပြောကြားမည်ဖြစ်ပြီး သင့်ကို ဤသုတေသနတွင်ပါဝင်ရန် ဖိတ်ခေါ်ပါမည်။ သုတေသနတွင်ပါဝင်ရန် မဆုံးဖြတ်မီ သုတေသနအကြောင်းကို သင်ဆွေးနွေးလိုသူ မည်သူနှင့်မဆို ဆွေးနွေးနိုင်ပါသည်။

သင်မရှင်းလင်းသောအချက်များရှိပါက ယခုချက်ချင်းမေးမြန်းနိုင်ပါသည်။ အချိန်ယူ၍ ရှင်းပြပါမည်။ နောက်ထပ်မေးမြန်းလိုသည်များရှိပါကလည်း ကျွန်တော့်ကိုဖြစ်စေ၊ သုတေသနအဖွဲ့မှ ဆရာဝန်များကိုဖြစ်စေ၊ သုတေသနအဖွဲ့မှ ဝန်ထမ်းများကိုဖြစ်စေ မေးမြန်းနိုင်ပါသည်။

(၂) သုတေသန၏ရည်ရွယ်ချက်

သုတေသန၏ရည်ရွယ်ချက်မှာ မြန်မာနိုင်ငံ ရန်ကုန်မြို့ရှိ ကင်ဆာဆေးသွင်းကုသခြင်းဆောင်ရွက်မည့် အမျိုးသမီး ရင်သားကင်ဆာလူနာများတွင် စိတ်ပူပန်ခြင်း၊ စိတ်ဓာတ်ကျခြင်း နှင့် ဘဝအရည်အသွေး အခြေအနေ တို့ကို ဖော်ထုတ်သိရှိရန်ဖြစ်ပါသည်။ ရင်သားကင်ဆာလူနာများတွင် စိတ်ပူပန်ခြင်းနှင့် စိတ်ဓာတ်ကျခြင်းတို့ ခံစားရလေ့ရှိပြီး ရင်သားကင်ဆာရောဂါ စစ်ဆေးတွေ့ရှိမှုနှင့် ကုသမှုတို့သည် ဘဝအရည်အသွေးအပေါ်တွင် ဆိုးကျိုးသက်ရောက်မှုရှိတတ်ပါသည်။ ထို့ကြောင့် ကျွန်တော်တို့သည် ကင်ဆာဆေးသွင်းကုသခြင်းဆောင်ရွက်မည့် အမျိုးသမီး ရင်သားကင်ဆာလူနာများတွင် စိတ်ပူပန်ခြင်း၊ စိတ်ဓာတ်ကျခြင်း နှင့် ဘဝအရည်အသွေး အခြေအနေ တို့ကို ဖော်ထုတ်သိရှိလိုပါသည်။

(၃) သုတေသနတွင်ပါဝင်မည့်သူများကိုရွေးချယ်ခြင်း

ဤဆေးခန်းတွင် ရင်သားကင်ဆာရောဂါကို ကင်ဆာဆေးသွင်းကုသရန်စာရင်းပေးပြီး သုတေသနတွင် ပါဝင်ရန် သတ်မှတ်ချက်များနှင့်ကိုက်ညီသူ အမျိုးသမီးရင်သားကင်ဆာလူနာများအားလုံးကို သုတေသနတွင်ပါဝင်ရန် ဖိတ်ခေါ်ပါသည်။ ဤသုတေသနတွင် ပါဝင်မည့်သူများမှာ အနည်းဆုံး ၇၄ ဦးဖြစ်ပါသည်။

(၄) သုတေသနတွင် မိမိဆန္ဒအလျောက်ပါဝင်ခြင်း

ဤသုတေသနတွင်ပါဝင်ခြင်းမှာ သင်၏ဆန္ဒအလျောက်သာဖြစ်ပါသည်။ ဤသုတေသနတွင်ပါဝင်ခြင်း သို့မဟုတ် မပါဝင်ခြင်းမှာ သင်၏ရွေးချယ်မှုသာဖြစ်ပါသည်။ သုတေသနတွင်ပါဝင်သည်ဖြစ်စေ၊ မပါဝင်သည်ဖြစ်စေ၊ ဤဆေးခန်းတွင် သင်ရရှိမည့် ကျန်းမာရေးဝန်ဆောင်မှုများကို ဆက်လက်ရရှိမည်ဖြစ်ပြီး ပြောင်းလဲမှုတစုံတရာမရှိပါ။

(၅) သုတေသနဆောင်ရွက်မည့်အစီအစဉ်

သင်သည် ဤသုတေသနတွင်ပါဝင်ရန် သတ်မှတ်ချက်များနှင့်ကိုက်ညီသောကြောင့် သုတေသနတွင်ပါဝင်ရန် သင့်ကိုဖိတ်ခေါ်ပါသည်။ သင်သည် သုတေသနတွင်ပါဝင်ရန်သဘောတူပါက မည်သည့်ဆောင်ရွက်ချက်မျှ မဆောင်ရွက်မီတွင် သုတေသနတွင်ပါဝင်ရန်သဘောတူလွှာကို လက်မှတ်ရေးထိုးရန် လိုအပ်ပါသည်။

ထို့နောက် ကျွန်တော်တို့က သင့်ကို သုတေသနမေးခွန်းများ မေးပါမည်။ သင်၏အတွေ့အကြုံများသည် ဤသုတေသနအတွက် များစွာအကျိုးရှိစေမည်ဟု ယုံကြည်ပါသည်။

သုတေသနမေးခွန်းများတွင် သင်၏ အသက်၊ လူမျိုး၊ အိမ်ထောင်ရှိ/မရှိ၊ ပညာရေး၊ သားသမီးဦးရေ၊ အလုပ်အကိုင်အခြေအနေ၊ သွေးဆုံးခြင်းရှိ/မရှိ၊ ဆေးလိပ်သောက်သုံးသည့်ရာဇဝင်၊ အရက်သောက်သုံးသည့်ရာဇဝင်၊ မိသားစုဝင်ငွေ၊ မိသားစုအတွင်း ရင်သားကင်ဆာဖြစ်ပွားခဲ့မှုရာဇဝင်၊ မိသားစု၏ ကူညီဖေးမထောက်ပံ့ပေးမှုရှိ/မရှိ၊ လူမှုရေးအရ ကူညီဖေးမထောက်ပံ့ပေးမှု ရှိ/မရှိ၊ သင်၏ရောဂါရာဇဝင်နှင့် အခြေအနေ၊ ကင်ဆာဆေးသွင်း ကုသခြင်းနှင့် ပါတ်သက်သည့် ဗဟုသုတ၊ ကိုယ်တိုင်အစွမ်း၊ စာနာစိတ်၊ သုံးစွဲသူ၏စိတ်ကျေနပ်မှု၊ စိတ်ပူပန်ခြင်း၊ စိတ်ဓာတ်ကျခြင်း၊ ဘဝအရည်အသွေးတို့ ပါဝင်ပါသည်။ ထိုမေးခွန်းများတွင် သင်၏လိင်မှုဆိုင်ရာအကြောင်း မေးမြန်းမည့် မေးခွန်းအချို့လည်း ပါဝင်ပါသည်။ သင်၏ ခန္ဓာကိုယ်ထုထည်အညွှန်းကိန်းကိုရရှိရန် သင်၏ ကိုယ်အလေးချိန်နှင့် အရပ်အမြင့်တို့ကိုလည်း တိုင်းတာပါမည်။ လိုအပ်သောအချက်အလက်များရရှိရန် သင်၏ ဆေးမှတ်တမ်းများကိုလည်း အသုံးပြုပါမည်။

(၆) သုတေသနကြာမြင့်မည့်အချိန်ကာလ

ဤသုတေသနသည် ကင်ဆာဆေးသွင်းကုသခြင်းဆောင်ရွက်သည့် အချိန်ကာလအတွင်းတွင် ဆောင်ရွက်မည်ဖြစ်ပြီး ခန့်မှန်းခြေအားဖြင့် (၆)လခန့်ဖြစ်ပါသည်။ သုတေသနမေးခွန်းများ မေးမြန်းခြင်းကို ကင်ဆာဆေးသွင်းကုသခြင်း အတွက် စာရင်းပေးသွင်းချိန်တွင် (၁)ကြိမ်နှင့် ကင်ဆာဆေးသွင်းကုသခြင်းပြီးစီးချိန်တွင် (၁)ကြိမ် စုစုပေါင်း(၂)ကြိမ် ဆောင်ရွက်ပါမည်။ သုတေသနမေးခွန်းများမေးမြန်းခြင်းအတွက် ခန့်မှန်းကြာမြင့်ချိန်မှာ မိနစ်(၄၀)ခန့်ဖြစ်ပါသည်။

(၇) အန္တရာယ်များ

ဤသုတေသနတွင်ပါဝင်ခြင်းအတွက် အန္တရာယ်ဖြစ်နိုင်မှုအခြေအနေမရှိပါ။

(၈) အကျိုးကျေးဇူးများ

ဤသုတေသနတွင် သင်ပါဝင်ခြင်းသည် ကင်ဆာဆေးသွင်းကုသခြင်းဆောင်ရွက်မည့် အမျိုးသမီး ရင်သားကင်ဆာလူနာများတွင် စိတ်ပူပန်ခြင်း၊ စိတ်ဓာတ်ကျခြင်း နှင့် ဘဝအရည်အသွေး အခြေအနေတို့ကို ဖော်ထုတ်သိရှိရန် ကူညီပေးခြင်း ဖြစ်ပါသည်။ ဤသုတေသန၏တွေ့ရှိချက်များသည် အနာဂတ်တွင် ကျွန်တော်တို့နိုင်ငံမှ ရင်သားကင်ဆာ လူနာများအတွက် အကျိုးကျေးဇူးများစွာ ဖြစ်ထွန်းစေမည်ဖြစ်ပါသည်။

(၉) ထောက်ပံ့ပေးမှု

ဤသုတေသနတွင်ပါဝင်ခြင်းကြောင့် ဆုံးရှုံးသွားသော သင်၏အလုပ်ချိန်များအတွက် တစ်ကြိမ်လျှင် (၅၀၀၀)ကျပ် ပြန်လည်ထောက်ပံ့ပေးပါမည်။ ထိုမှအပ အခြားသောထောက်ပံ့ပေးမှုများ၊ လက်ဆောင်များ ရရှိမည်မဟုတ်ပါ။

(၁၀) သတင်းအချက်အလက်များ လျှို့ဝှက်ထားရှိမှု

ဤသုတေသနမှ စုဆောင်းရရှိသောအချက်အလက်များကို မသက်ဆိုင်သူများ မသိရှိစေရန် ဆောင်ရွက်ပါမည်။ ဤသုတေသနမှ စုဆောင်းရရှိသော သင်၏အချက်အလက်များကို သုတေသီများမှလွဲ၍ အခြားမည်သူမျှ ကြည့်ရှုခွင့်ရမည်မဟုတ်ပါ။ သင်၏မည်သည့်အချက်အလက်ကိုမဆို သင်၏အမည်အစား ကုဒ်နံပါတ်တစ်ခုဖြင့် မှတ်သားပါမည်။ သင်၏ကုဒ်နံပါတ်ကို သုတေသီများကသာ သိရှိမည်ဖြစ်ပြီး ထိုအချက်အလက်များကို သော့ခတ်၍ သိမ်းဆည်းပါမည်။ ဤသုတေသနမှ စုဆောင်းရရှိသော သင်၏ အချက်အလက်များကို သုတေသနပြီးစီးပါက ဖျက်ဆီးပစ်ပါမည်။

(၁၁) သုတေသနတွေ့ရှိချက်များကို တင်ပြခြင်း

ဤသုတေသန၏တွေ့ရှိချက်များကို အများပြည်သူထံသို့ ကျယ်ပြန့်စွာတင်ပြခြင်းမပြုမီ သင့်ကိုရှင်းလင်း ပြောကြားပါမည်။ လုံခြုံစွာသိမ်းဆည်းထားရမည့် အချက်အလက်များကို တင်ပြခြင်းပြုမည်မဟုတ်ပါ။ သုတေသနပြီးစီးပါက သုတေသနတွေ့ရှိချက်များကို အခြားသောစိတ်ပါဝင်စားသူများ လေ့လာနိုင်စေရန်အတွက် နိုင်ငံတကာဂျာနယ်များတွင် တင်ပြပါမည်။

(၁၂) ဤသုတေသနလုပ်ငန်းစဉ်တွင် ပါဝင်ရန် ငြင်းဆိုခွင့်၊ ရပ်ဆိုင်းနိုင်ခွင့်

ဤသုတေသနလုပ်ငန်းစဉ်တွင် ပါဝင်လိုခြင်းမရှိပါက မပါဝင်ပဲနေနိုင်ပါသည်။ သုတေသနတွင် မပါဝင်ခြင်းသည် ဤဆေးခန်းရှိ သင်၏ဆေးကုသမှုကို မည်သည့်သက်ရောက်မှုမျှရှိမည်မဟုတ်ပါ။ သင့်အနေဖြင့် ဤဆေးခန်းမှရရှိမည့် ဆေးကုသမှုအားလုံးကို ဆက်လက်ရရှိမည်ဖြစ်ပါသည်။

ဤသုတေသနလုပ်ငန်းစဉ်တွင် ပါဝင်ခြင်းကို သင်၏ဆန္ဒအရ အချိန်မရွေးရပ်ဆိုင်းနိုင်ပြီး ဤဆေးခန်းတွင် လူနာတစ်ဦးအနေဖြင့် သင်၏ဆေးကုသမှု အခွင့်အရေးများ ဆုံးရှုံးခြင်းမရှိပါ။

(၁၃) ဆက်သွယ်ရန်

သင်မေးမြန်းလိုသည်များရှိပါက ယခုဖြစ်စေ၊ နောက်ပိုင်းတွင်ဖြစ်စေ၊ သုတေသနစတင်ဆောင်ရွက်နေချိန်တွင်ဖြစ်စေ မေးမြန်းနိုင်ပါသည်။ နောက်ပိုင်းတွင် မေးမြန်းလိုသည်များရှိပါက ဒေါက်တာမင်းသုနောင်၊ သုတေသီ၊ ပြည်သူ့ကျန်းမာရေးပါရဂူဘွဲ့ကျောင်းသား၊ ဖုန်းနံပါတ် ၀၉၂၅၄၇၇၁၅၃၅၊ အီးမေးလ် dr.minthunaung@gmail.com သို့ ဆက်သွယ်နိုင်ပါသည်။

ဤသုတေသနအဆိုပြုမူကြမ်းကို ကျင့်ဝတ်ဆိုင်ရာစိစစ်ရေးဘုတ်အဖွဲ့၊ တပ်မတော်ဆေးသုတေသနတပ်မှ စိစစ် ခွင့်ပြုပြီးဖြစ်ပါသည်။

အပိုင်း(၂) သုတေသနတွင်ပါဝင်ရန်သဘောတူလွှာ

ကျွန်မသည် ရှေ့တွင်ဖော်ပြထားသော အကြောင်းအရာများကို ဖတ်ရှုပြီးဖြစ်ပါသည် (သို့မဟုတ်) ကျွန်မကို ဖတ်ရှုပြပြီးဖြစ်ပါသည်။ ကျွန်မသည် ဤသုတေသနနှင့်ပါတ်သက်၍ မေးခွန်းများမေးမြန်းခွင့်ရရှိခဲ့ပြီးဖြစ်ပါသည်။ ကျွန်မမေးမြန်းခဲ့သောမေးခွန်းများကိုလည်း ကျွန်မကျေနပ်သည်အထိ ဖြေဆိုပေးခဲ့ပြီးဖြစ်ပါသည်။ ကျွန်မသည် ဤသုတေသနတွင်ပါဝင်ရန် မိမိ၏ဆန္ဒအလျောက် သဘောတူပါသည်။

ပါဝင်သူ၏အမည် _____

ပါဝင်သူ၏လက်မှတ် _____

ရက်စွဲ (ရက်၊ လ၊ နှစ်) _____

စာမတတ်သူဖြစ်လျှင်

ကျွန်တော်/ကျွန်မသည် ဤသုတေသနလုပ်ငန်းစဉ်တွင် ပါဝင်မည့်သူအား အသိပေးအကြောင်းကြားလွှာနှင့် သဘောတူလွှာတို့ကို သေချာစွာဖတ်ပြပြီးစီးကြောင်းနှင့် ပါဝင်မည့်သူသည် မေးခွန်းများမေးမြန်းခွင့် ရရှိခဲ့ကြောင်း သက်သေပြုပါသည်။ ပါဝင်မည့်သူသည် သူ၏ဆန္ဒအလျောက် ဤသုတေသနတွင်ပါဝင်ရန် လွတ်လပ်စွာ သဘောတူခြင်းဖြစ်ကြောင်း အတည်ပြုပါသည်။

သက်သေ၏အမည် _____

ပါဝင်မည့်သူ၏လက်ဗွေ

သက်သေ၏လက်မှတ် _____

ရက်စွဲ (ရက်၊ လ၊ နှစ်) _____

ဤသုတေသနလုပ်ငန်းစဉ်တွင် ပါဝင်မည့်သူသည် အသိပေးအကြောင်းကြားလွှာနှင့် သဘောတူလွှာတို့ကို သေချာစွာဖတ်ရှုပြီးဖြစ်ပါသည် (သို့မဟုတ်) ကျွန်တော်က ပါဝင်မည့်သူကို သေချာစွာဖတ်ပြပြီးဖြစ်ပါသည်။ ပါဝင်မည့်သူသည် ဤသုတေသနနှင့်ပါတ်သက်၍ မေးခွန်းများမေးမြန်းခွင့်ရရှိခဲ့ပြီးဖြစ်ကြောင်း အတည်ပြုပါသည်။ မေးမြန်းခဲ့သောမေးခွန်းများကိုလည်း ကျွန်တော်က အကောင်းဆုံးကြိုးစား၍ မှန်ကန်စွာ ဖြေဆိုပေးခဲ့ပြီးဖြစ်ပါသည်။ ပါဝင်မည့်သူသည် သူ၏ဆန္ဒအလျောက် ဤသုတေသနတွင်ပါဝင်ရန် လွတ်လပ်စွာ သဘောတူခြင်းဖြစ်ကြောင်း အတည်ပြုပါသည်။

ဤအသိပေးအကြောင်းကြား သဘောတူလွှာမိတ္တူတစ်စုံကို ပါဝင်မည့်သူအား ပေးအပ်ပြီးဖြစ်ပါသည်။

သုတေသီ၏အမည် _____

သုတေသီ၏လက်မှတ် _____

ရက်စွဲ (ရက်၊ လ၊ နှစ်) _____

Appendix C

Questionnaire

Code No. __ __ __ __

Effect of Peer Support Intervention on Anxiety, Depression and Quality of Life among Breast Cancer Patients on Chemotherapy in Yangon, Myanmar: Randomized Controlled Trial

Please tick [√] on the number of the answers.

Part 1. Predisposing Factors

1. Weight_____ kg
   Height _____ cm
   BMI _____ kg/m^2

2. Age (Completed years at the last birthday of the participant)
   _____ Years

3. What is your ethnicity?
   1. [ ] Kachin
   2. [ ] Kayah
   3. [ ] Kayin
   4. [ ] Chin
   5. [ ] Bamar
   6. [ ] Mon
   7. [ ] Rakhine
   8. [ ] Shan
   9. [ ] Others _____

4. What is your marital status?
   1. [ ] Single
   2. [ ] Married
   3. [ ] Widowed/Divorced

5. What is your level of education?
   1. [ ] Illiterate
   2. [ ] Never gone to school but can read and write simple Myanmar language
   3. [ ] Primary School
   4. [ ] Middle School
   5. [ ] High School
   6. [ ] College or university and above

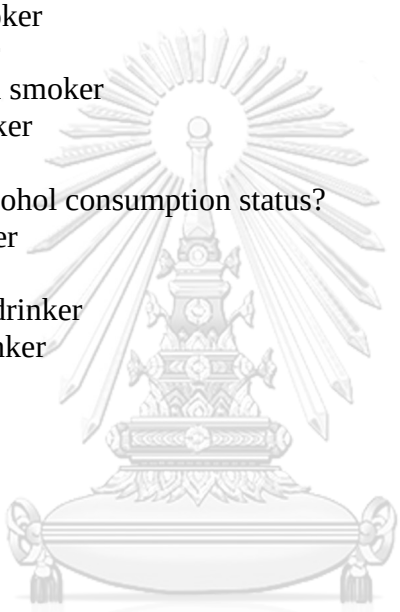
6. How many children do you have?
   _____

7. What is your employment status?
   1. [ ] Housewife
   2. [ ] Employed
   3. [ ] Unemployed

8. What is your menopausal status?
   1. [ ] Pre-menopause
   2. [ ] Post-menopause

9. What is your smoking status?
   1. [ ] Never-smoker
   2. [ ] Ex-smoker
   3. [ ] Occasional smoker
   4. [ ] Daily smoker

10. What is your alcohol consumption status?
    1. [ ] Non-drinker
    2. [ ] Ex-drinker
    3. [ ] Moderate drinker
    4. [ ] Heavy-drinker



Part 2. Enabling Factors

11. How much is your monthly family income?
    1. [ ] ≤ 100,000 Kyats
    2. [ ] 100,001 – 200,000 Kyats
    3. [ ] 200,001 – 300,000 Kyats
    4. [ ] 300,001 – 400,000 Kyats
    5. [ ] > 400,000 Kyats

12. Do you have family history of breast cancer?
    1. [ ] Yes
    2. [ ] No

13. Do you have good relationship with your family members?
    1. [ ] Yes
    2. [ ] No (if No, go to Q.15)

14. If Yes, with which family member do you have good relationship?
    1. [ ] Father
    2. [ ] Mother
    3. [ ] Husband
    4. [ ] Brother(s)
    1. [ ] Sister(s)
    2. [ ] Son(s)
    3. [ ] Daughter(s)
    4. [ ] Others (please specify) _____

15. Do you receive care and support from your friends or neighbors?
    1. [ ] Yes
    2. [ ] No

Part 3. Need Factors

16. What is the duration of your disease (breast cancer)?
    1. [ ] ≤ 12 months
    2. [ ] 13-24 months
    3. [ ] 25-36 months
    4. [ ] 37-48 months
    5. [ ] > 48 months

17. Have you ever been hospitalized for treating breast cancer?
    1. [ ] Yes
    2. [ ] No (if No, go to Q. 19)

18. How many times were you been hospitalized for treating breast cancer?
    _____ Times

19. What is the clinical staging of breast cancer?
    1. [ ] Stage I
    2. [ ] Stage II
    3. [ ] Stage III
    4. [ ] Stage IV

20. What are the received treatment for breast cancer?
    1. [ ] Surgery
    2. [ ] Radiotherapy
    3. [ ] Hormonal therapy

21. Do you have any co-morbidity?
    1. [ ] Yes
    2. [ ] No (if No, go to Q. 23)

22. Co-morbidities of the participant
    1. [ ] Coronary artery disease or myocardial infarction
    2. [ ] Heart diseases
    3. [ ] Hypertension
    4. [ ] Chronic obstructive pulmonary disease
    5. [ ] Gastric Ulcer
    6. [ ] Diabetes Mellitus
    7. [ ] Others (please specify) _____

Part 4. Proximal Outcomes

Knowledge about side effects and management of these side effects regarding chemotherapy

23. Is hair loss common side effect of chemotherapy?
    1. [ ] Yes 1
    2. [ ] No (if No, go to Q. 25) 0

24. How can hair loss be managed?
    1. [ ] Consult with doctor 1
    2. [ ] Hairs may regrow after treatment 1
    3. [ ] Medication 1
    4. [ ] Don't know 0

25. Are cold and clammy extremities common side effects of chemotherapy?
    1. [ ] Yes 0
    2. [ ] No (if No, go to Q. 27) 1

26. How can cold and clammy extremities be managed?
    1. [ ] Practice meditation 0
    2. [ ] Consult with doctor 0
    3. [ ] Don't know 0

27. Is nail changes common side effect of chemotherapy?
    1. [ ] Yes 1

2. [ ] No (if No, go to Q. 29) 0

28. How can nail changes be managed?

1. [ ] Wear gloves when washing dishes 1
2. [ ] Increase iron in your diet 1
3. [ ] Avoid caffeine 1
4. [ ] Wear comfortable shoes 1
5. [ ] Don’t know 0

29. Is loss of appetite common side effect of chemotherapy?
1. [ ] Yes 1
2. [ ] No (if No, go to Q. 31) 0

30. How can loss of appetite be managed?
1. [ ] Do not limit how much you eat 1
2. [ ] Eat snack whenever you are hungry 1
3. [ ] Eat 5 to 6 small meals a day 1
4. [ ] Keep your favorite foods on hand for snacking 1
5. [ ] Try to eat with family or friends 1
6. [ ] Don't know 0

31. Is diarrhea common side effect of chemotherapy?
1. [ ] Yes 1
2. [ ] No (if No, go to Q. 33) 0

32. How can diarrhea be managed?
1. [ ] Consult with doctor 1
2. [ ] Taking drugs 1
3. [ ] Don't know 0

33. Is dizziness common side effect of chemotherapy?
1. [ ] Yes 0
2. [ ] No (if No, go to Q. 35) 1

34. How can dizziness be managed?

1. [ ] Consult with doctor 0
2. [ ] Balance exercises 0
3. [ ] Don’t know 0

35. Are nausea and vomiting common side effect of chemotherapy?

1. [ ] Yes 1
2. [ ] No (if No, go to Q. 37) 0

36. How can nausea and vomiting be managed?

1. [ ] Taking drugs 1
2. [ ] Drinking plenty of fluids 1
3. [ ] Taking exercise 0
4. [ ] Don’t know 0

37. Are sores mouth or dry mouth common side effects of chemotherapy?

1. [ ] Yes 1
2. [ ] No (if No, go to Q. 39) 0

38. How can sores mouth or dry mouth be managed?

1. [ ] Clean the teeth after eating and floss gently 1
2. [ ] Choose soft or liquid foods such as soups and smoothies 1
3. [ ] Soothe the mouth and gums with ice cubes 1
4. [ ] Drink sugar-free drinks 1
5. [ ] Taking exercise 0
6. [ ] Use a straw to drink 1
7. [ ] Avoid crunchy, salty, very spicy, acidic or hot foods 1
8. [ ] Don't know 0

39. Is fever common side effect of chemotherapy?

1. [ ] Yes 0
2. [ ] No (if No, go to Q. 41) 1

40. How can fever be managed?

1. [ ] Medication 0
2. [ ] Sponging 0
3. [ ] Consult with doctor 0

4. [ ] Don't know 0

41. Is constipation common side effect of chemotherapy?
1. [ ] Yes 1
2. [ ] No (if No, go to Q. 43) 0

42. How can constipation be managed?
1. [ ] Consuming high-fiber foods 1
2. [ ] Drinking plenty of fluids 1
3. [ ] Taking naps 0
4. [ ] Taking regular and gentle exercise 1
5. [ ] Don't know 0

43. Is fatigue common side effect of chemotherapy?

1. [ ] Yes 1
2. [ ] No (if No, go to Q. 45) 0

44. How can fatigue be managed?

1. [ ] Consult with doctor 1
2. [ ] Taking exercise 1
3. [ ] Drinking plenty of fluids 0
4. [ ] Taking naps 1
5. [ ] Don’t know 0

Self-efficacy

No.		Strongly agree	Agree	Uncertain	Disagree	Strongly disagree
45.	I am confident that I am able to deal with anxiety related to breast cancer.	5	4	3	2	1
46.	I am confident that I am able to deal with depression related to breast cancer.	5	4	3	2	1
47.	I am confident that I am able to deal with side effects related to chemotherapy.	5	4	3	2	1
48.	It is easy for me to ask for help from family members.	5	4	3	2	1
49.	It is easy for me to ask for help from friends.	5	4	3	2	1
50.	It is easy for me to ask for help from neighbors.	5	4	3	2	1
51.	I am confident that I am able to actively participate in making any decisions about choosing treatment for my disease (breast cancer).	5	4	3	2	1
52.	I am confident that I am able to actively participate in making any decisions about choosing healthcare center for treating my disease (breast cancer).	5	4	3	2	1

Empathy

No.		Never	Rarely	Sometimes	Often	Always
53.	When someone else is feeling excited, I tend to get excited too.	0	1	2	3	4
54.	Other people's difficulties or troubles do not disturb me.	4	3	2	1	0
55.	It upsets me to see someone being treated disrespectfully.	0	1	2	3	4
56.	I don't feel happy when someone close to me is happy.	4	3	2	1	0
57.	I enjoy making other people feel better.	0	1	2	3	4
58.	I have tender, concerned feelings for people less fortunate than me.	0	1	2	3	4

Consumer Satisfaction (Intervention Group)

No.		Very Effective	Effective	Fair	Not Effective	Not Effective Completely
59. (I)	Were the counseling sessions effective to improve your mood and feeling?	5	4	3	2	1
60. (I)	Were the group meetings effective to improve your mood and feeling?	5	4	3	2	1
61. (I)	Were the telephone support sessions effective to improve your mood and feeling?	5	4	3	2	1

No.		Very Good	Good	Fair	Bad	Very Bad
62. (I)	How will you score the counselor who did counseling to you?	5	4	3	2	1
63. (I)	How will you score the facilitators who facilitated the group meeting?	5	4	3	2	1
64. (I)	How will you score the facilitators who did telephone support to you?	5	4	3	2	1

Consumer Satisfaction (Both Groups)

No.		Very Effective	Effective	Fair	Not Effective	Not Effective Completely
65.	Was the education session about chemotherapy (including treatment procedure, benefits and side effects) that you received as usual care effective to improve your mood and feeling?	5	4	3	2	1
66.	Was the advice on healthy eating that you received as usual care effective to improve your mood and feeling?	5	4	3	2	1
67.	Was the advice on regular physical activity that you received as usual care effective to improve your mood and feeling?	5	4	3	2	1

No.		Very Good	Good	Fair	Bad	Very Bad
68.	How will you score the doctor who treated you at the clinic?	5	4	3	2	1
69.	How will you score the nurse who treated you at the clinic?	5	4	3	2	1
70.	How will you score the overall services that you received during your treatment period at the clinic?	5	4	3	2	1

Part 5. Distal Outcomes

Anxiety

71. Do you feel pressure or constriction?
    1. [ ] Severely present
    2. [ ] Moderately present
    3. [ ] Mildly present
    4. [ ] None

72. Do you feel fluttering in your chest?
    1. [ ] None
    2. [ ] Mildly present
    3. [ ] Moderately present
    4. [ ] Severely present

73. Are you frightened without reason?
    1. [ ] Severely present
    2. [ ] Moderately present
    3. [ ] Mildly present
    4. [ ] None

74. Are you feeling restless?
    1. [ ] Severely present
    2. [ ] Moderately present
    3. [ ] Mildly present
    4. [ ] None

75. Do you have worries without reason?
    1. [ ] Almost always
    2. [ ] Frequently
    3. [ ] Sometimes
    4. [ ] Not at all

76. I feel fear suddenly
    1. [ ] Very often indeed
    2. [ ] Quite often
    3. [ ] Not very often
    4, [ ] Not at all

77. I can sit comfortably and feel stress-free
    1. [ ] Definitely
    2. [ ] Usually
    3. [ ] Not Often
    4. [ ] Not at all

Depression

78. Are you mentally exhausted?
    1. [ ] Severely present
    2. [ ] Moderately present
    3. [ ] Mildly present
    4. [ ] Not at all

79. I am enjoying things as usual
    1. [ ] Definitely as much
    2. [ ] Not quite so much
    3. [ ] Only a little
    4. [ ] Hardly at all

80. I have lost interest in how I look
    1. [ ] Definitely
    2. [ ] I don't take as much care as I should
    3. [ ] I may not take quite as much care
    4. [ ] I take just as much care as ever

81. Do you have a feeling that you can’t control your tears?
    1. [ ] Not at all
    2. [ ] Mildly present
    3. [ ] Moderately present
    4. [ ] Severely present

82. Do you feel that life is not worth living?
    1. [ ] Not at all
    2. [ ] Mildly present
    3. [ ] Moderately present
    4. [ ] Severely present

83. Do you feel depressed?
    1. [ ] Severely present
    2. [ ] Moderately present
    3. [ ] Mildly present
    4. [ ] Not at all

84. I can enjoy mass media entertainments and reading
    1. [ ] Often
    2. [ ] Sometimes
    3. [ ] Not often
    4. [ ] Very seldom

Quality of Life

		Not at All (1)	A Little (2)	Quite a Bit (3)	Very Much (4)
85.	Do you have any trouble doing strenuous activities, like carrying a heavy shopping bag or a suitcase?				
86.	Do you have any trouble taking a long walk?				
87.	Do you have any trouble taking a short walk outside of the house?				
88.	Do you need to stay in bed or a chair during the day?				
89.	Do you need help with eating, dressing, washing yourself or using the toilet?				

During the Past Week

		Not at All (1)	A Little (2)	Quite a Bit (3)	Very Much (4)
90.	Were you limited in doing either your work or other daily activities?				
91.	Were you limited in pursuing your hobbies or other leisure time activities?				
92.	Were you short of breath?				
93.	Have you had pain?				
94.	Did you need to rest?				
95.	Have you had trouble sleeping?				
96.	Have you felt weak?				
97.	Have you lacked appetite?				
98.	Have you felt nauseated?				
99.	Have you vomited?				
100.	Have you been constipated?				
101.	Have you had diarrhea?				
102.	Were you tired?				

103.	Did pain interfere with your daily activities?				
104.	Have you had difficulty in concentrating on things, like reading a newspaper or watching television?				
105.	Did you feel tense?				
106.	Did you worry?				
107.	Did you feel irritable?				
108.	Did you feel depressed?				
109.	Have you had difficulty remembering things?				
110.	Has your physical condition or medical treatment interfered with your family life?				
111.	Has your physical condition or medical treatment interfered with your social activities?				
112.	Has your physical condition or medical treatment caused you financial difficulties?				

For the following questions please circle the number between 1 and 7 that best applies to you

113. How would you rate your overall health during the past week?

Very poor Excellent

1	2	3	4	5	6	7

114. How would you rate your overall quality of life during the past week?

Very poor Excellent

1	2	3	4	5	6	7

During the past week:

		Not at All (1)	A Little (2)	Quite a Bit (3)	Very Much (4)
115.	Did you have a dry mouth?				
116.	Did food and drink taste different than usual?				
117.	Were your eyes painful, irritated or watery?				
118.	Have you lost any hair?				
119.	Answer this question only if you had any hair loss: Were you upset by the loss of your hair?				
120.	Did you feel ill or unwell?				
121.	Did you have hot flushes?				
122.	Did you have headaches?				
123.	Have you felt physically less attractive as a result of your disease or treatment?				
124.	Have you been feeling less feminine as a result of your disease or treatment?				
125.	Did you find it difficult to look at yourself naked?				
126.	Have you been dissatisfied with your body?				
127.	Were you worried about your health in the future?				

During the past four weeks:

		Not at All (1)	A Little (2)	Quite a Bit (3)	Very Much (4)
128.	To what extent were you interested in sex?				
129.	To what extent were you sexually active? (with or without intercourse)				
130.	Answer this question only if you have been sexually active: To what extent was sex enjoyable for you?				

During the past week:

		Not at All (1)	**A Little (2)**	**Quite a Bit (3)**	**Very Much (4)**
131.	Did you have any pain in your arm or shoulder?				
132.	Did you have a swollen arm or hand?				
133.	Was it difficult to raise your arm or to move it sideways?				
134.	Have you had any pain in the area of your affected breast?				
135.	Was the area of your affected breast swollen?				
136.	Was the area of your affected breast oversensitive?				
137.	Have you had skin problems on or in the area of your affected breast (e.g., itchy, dry, flaky)?				

သုတေသနမေးခွန်းလွှာ

ကုဒ်နံပါတ်။ __ __ __ __

မြန်မာနိုင်ငံ ရန်ကုန်မြို့ရှိ ကင်ဆာဆေးသွင်း ကုသခြင်းဆောင်ရွက်မည့် အမျိုးသမီး ရင်သားကင်ဆာလူနာများတွင် စိတ်ပူပန်ခြင်း၊ စိတ်ဓာတ်ကျခြင်း နှင့် ဘဝအရည်အသွေးတို့အပေါ် ဖြစ်စဉ်တူဝေဒနာရှင်များမှ ကူညီဖေးမပေးခြင်း လုပ်ဆောင်ချက်၏ သက်ရောက်မှု

ဖြေဆိုသည့်အဖြေ၏နံပါတ်တွင် ကျေးဇူးပြု၍ အမှန်ခြစ် [√] ခြစ်ပါ။

အပိုင်း(၁) ကနဦးအချက်အလက်များ

၁။ ကိုယ်အလေးချိန် _____ ကီလိုဂရမ်
အရပ်အမြင့် _____ မီတာ
ခန္ဓာကိုယ်ထုထည်အညွှန်းကိန်း _____ ကီလိုဂရမ် /မီတာ၂

၂။ အသက် (ပါဝင်သူ၏နောက်ဆုံးမွေးနေ့တွင် ပြည့်မြောက်ပြီးသည့်နှစ်)
_____ နှစ်

၃။ သင်၏လူမျိုးကိုဖော်ပြပါ။
၁။ ( ) ကချင်
၂။ ( ) ကယား
၃။ ( ) ကရင်
၄။ ( ) ချင်း
၅။ ( ) ဗမာ
၆။ ( ) မွန်
၇။ ( ) ရခိုင်
၈။ ( ) ရှမ်း
၉။ ( ) အခြား _____

၄။ သင်၏အိမ်ထောင်ရေးအခြေအနေကို ဖော်ပြပါ။
၁။ ( ) အပျို
၂။ ( ) အိမ်ထောင်ရှိ
၃။ ( ) မုဆိုးမ /ကွာရှင်း

၅။ သင်၏ပညာအရည်အချင်းကို ဖော်ပြပါ။
၁။ ( ) စာမတတ်
၂။ ( ) ကျောင်းမနေဖူးပါ၊ သို့သော် ရိုးရှင်းသောမြန်မာစာကို ရေးနိုင် ဖတ်နိုင်သည်
၃။ ( ) မူလတန်း
၄။ ( ) အလယ်တန်း
၅။ ( ) အထက်တန်း
၆။ ( ) ကောလိပ် သို့မဟုတ် တက္ကသိုလ်နှင့်အထက်

၆။ သင့်တွင် ကလေးမည်မျှရှိပါသလဲ။

_____

၇။ သင်၏အလုပ်အကိုင်အခြေအနေကို ဖော်ပြပါ။
၁။ ( ) အိမ်ရှင်မ
၂။ ( ) အလုပ်ရှိပါသည်
၃။ ( ) အလုပ်မရှိပါ

၈။ သွေးဆုံးခြင်း ရှိ/မရှိ ဖော်ပြပါ။
၁။ ( ) သွေးမဆုံးသေးပါ
၂။ ( ) သွေးဆုံးပြီးပါပြီ

၉။ သင်၏ဆေးလိပ်သောက်သုံးမှုအခြေအနေကို ဖော်ပြပါ။
၁။ ( ) မသောက်ဖူးသူ
၂။ ( ) ယခင်ကသောက်ဖူးသူ
၃။ ( ) တခါတရံသောက်သုံးသူ
၄။ ( ) နေ့စဉ်သောက်သုံးသူ

၁၀။ သင်၏အရက်သောက်သုံးမှုအခြေအနေကို ဖော်ပြပါ။
၁။ ( ) မသောက်ဖူးသူ
၂။ ( ) ယခင်ကသောက်ဖူးသူ
၃။ ( ) သင့်တင့်စွာသောက်သုံးသူ
၄။ ( ) အလွန်သောက်သုံးသူ

အပိုင်း (၂) အထောက်အကူပြုမှုဆိုင်ရာအချက်အလက်များ

၁၀။ သင့်မိသားစု၏ လစဉ်ဝင်ငွေသည် မည်မျှဖြစ်သနည်း။
၁။ ( ) ≤ ၁၀၀ ၀၀၀ ကျပ်
၂။ ( ) ၁၀၀ ၀၀၁ - ၂၀၀ ၀၀၀ ကျပ်
၃။ ( ) ၂၀၀ ၀၀၁ - ၃၀၀ ၀၀၀ ကျပ်
၄။ ( ) ၃၀၀ ၀၀၁ - ၄၀၀ ၀၀၀ ကျပ်
၅။ ( ) > ၄၀၀ ၀၀၀ ကျပ်

၁၂။ သင်၏မိသားစုအတွင်းတွင် ရင်သားကင်ဆာရောဂါဖြစ်ပွားခဲ့သည့်ရာဇဝင် ရှိပါသလား။
၁။ ( ) ရှိပါသည်
၂။ ( ) မရှိပါ

၁၃။ သင်သည် သင်၏မိသားစုဝင်များနှင့် ဆက်ဆံရေးကောင်းမွန်ပါသလား။
၁။ ( ) ကောင်းပါသည်
၂။ ( ) မကောင်းပါ (မကောင်းပါ ဟုဖြေလျှင်၊ မေးခွန်းနံပါတ် ၁၅ သို့သွားပါ)

၁၄။ ကောင်းမွန်သည်ဆိုပါက မည်သူနှင့် ဆက်ဆံရေးကောင်းမွန်ပါသနည်း။
၁။ ( ) ဖခင်
၂။ ( ) မိခင်
၃။ ( ) ခင်ပွန်း
၄။ ( ) အစ်ကို /မောင် (များ)
၅။ ( ) အစ်မ /ညီမ (များ)
၆။ ( ) သား (များ)
၇။ ( ) သမီး (များ)
၈။ ( ) အခြား _____

၁၅။ သင်၏ သူငယ်ချင်းများ သို့မဟုတ် အိမ်နီးချင်းများထံမှ ဂရုစိုက်မှုနှင့် ဖေးမကူညီမှုတို့ ရရှိပါသလား။
၁။ ( ) ရပါသည်
၂။ ( ) မရပါ

အပိုင်း (၃) လိုအပ်မှုဆိုင်ရာအချက်အလက်များ

၁၆။ သင်၏ရင်သားကင်ဆာရောဂါ ဖြစ်ပွားခဲ့သော ကာလကိုဖော်ပြပါ။
၁။ ( ) ≤ ၁၂ လ
၂။ ( ) ၁၃ - ၂၄ လ
၃။ ( ) ၂၅ - ၃၆ လ
၄။ ( ) ၃၇ - ၄၈ လ
၅။ ( ) > ၄၈ လ

၁၇။ သင်သည် ရင်သားကင်ဆာရောဂါကုသရန်အတွက် ဆေးရုံတက်ဖူးပါသလား။
၁။ ( ) တက်ဖူးပါသည်
၂။ ( ) မတက်ဖူးပါ (မတက်ဖူးပါ ဟုဖြေလျှင်၊ မေးခွန်းနံပါတ် ၁၉ သို့သွားပါ)

၁၈။ ရင်သားကင်ဆာရောဂါကုသရန်အတွက် ဆေးရုံတက်ဖူးပါက ဘယ်နှစ်ကြိမ်တက်ဖူးပါသလဲ။
_____ ကြိမ်

၁၉။ သင်၏ ရင်သားကင်ဆာရောဂါအဆင့်ကို ဖော်ပြပါ။
၁။ ( ) အဆင့် ၁
၂။ ( ) အဆင့် ၂
၃။ ( ) အဆင့် ၃
၄။ ( ) အဆင့် ၄

၂၀။ ရင်သားကင်ဆာရောဂါအတွက် ရရှိခဲ့ပြီးသော ကုသမှုများကို ဖော်ပြပါ။
၁။ ( ) ခွဲစိတ်ကုသခြင်း
၂။ ( ) ဓာတ်ရောင်ခြည်ဖြင့်ကုသခြင်း
၃။ ( ) ဟော်မုန်းဆေးဖြင့်ကုသခြင်း

၂၁။ လက်ရှိခံစားနေရသည့် အခြားရောဂါများရှိပါသလား။
၁။ ( ) ရှိပါသည်
၂။ ( ) မရှိပါ (မရှိပါ ဟုဖြေလျှင်၊ မေးခွန်းနံပါတ် ၂၃ သို့သွားပါ)

၂၂။ လက်ရှိခံစားနေရသည့် အခြားရောဂါများကို ဖော်ပြပါ။
၁။ ( ) နှလုံးသွေးကြောရောဂါ (သို့) နှလုံးကြွက်သားပုပ်ခြင်း
၂။ ( ) နှလုံးရောဂါ
၃။ ( ) သွေးတိုးရောဂါ
၄။ ( ) နာတာရှည် အသက်ရှူအင်္ဂါအဖွဲ့အစည်း ပိတ်သည့်ရောဂါ
၅။ ( ) အစာအိမ်အနာရောဂါ
၆။ ( ) ဆီးချိုရောဂါ
၇။ ( ) အခြား _____

အပိုင်း (၄)
ကင်ဆာဆေးသွင်းကုသခြင်း၏ ဘေးထွက်ဆိုးကျိုးများနှင့် ထိုဘေးထွက်ဆိုးကျိုးများအတွက် ဆောင်ရွက်နိုင်သော နည်းလမ်းများအကြောင်း ဗဟုသုတ

၂၃။ ဆံပင်ကျွတ်ခြင်းသည် ကင်ဆာဆေးသွင်းကုသခြင်း၏ အဖြစ်များသော ဘေးထွက်ဆိုးကျိုးဖြစ်ပါသလား။
၁။ ( ) ဟုတ်ပါသည်
၂။ ( ) မဟုတ်ပါ (မဟုတ်ပါ ဟုဖြေလျှင်၊ မေးခွန်းနံပါတ် ၂၅ သို့သွားပါ)

၂၄။ ဆံပင်ကျွတ်ခြင်းအတွက် မည်သို့ဆောင်ရွက်နိုင်ပါသနည်း။
၁။ ( ) ဆရာဝန်နှင့်တိုင်ပင်ဆွေးနွေးခြင်း
၂။ ( ) ကုသမှုပြီးဆုံးပါက ဆံပင်များပြန်ပေါက်လာပါလိမ့်မည်
၃။ ( ) ဆေးဝါးများသုံးစွဲခြင်း
၄။ ( ) မသိပါ

၂၅။ ခြေဖျား လက်ဖျားများ အေးစက်၍ ချွေးစေးများပြန်ခြင်းသည် ကင်ဆာဆေးသွင်းကုသခြင်း၏ အဖြစ်များသော ဘေးထွက်ဆိုးကျိုးဖြစ်ပါသလား။
၁။ ( ) ဟုတ်ပါသည်
၂။ ( ) မဟုတ်ပါ (မဟုတ်ပါ ဟုဖြေလျှင်၊ မေးခွန်းနံပါတ် ၂၇ သို့သွားပါ)

၂၆။ ခြေဖျား လက်ဖျားများ အေးစက်၍ ချွေးစေးများပြန်ခြင်းအတွက် မည်သို့ဆောင်ရွက်နိုင်ပါသနည်း။
၁။ ( ) တရားထိုင်ခြင်း
၂။ ( ) ဆရာဝန်နှင့်တိုင်ပင်ဆွေးနွေးခြင်း
၃။ ( ) မသိပါ

၂၇။ လက်သည်း ခြေသည်းများ၏ ပြောင်းလဲခြင်းများသည် ကင်ဆာဆေးသွင်းကုသခြင်း၏ အဖြစ်များသော ဘေးထွက်ဆိုးကျိုးများဖြစ်ပါသလား။
၁။ ( ) ဟုတ်ပါသည်
၂။ ( ) မဟုတ်ပါ (မဟုတ်ပါ ဟုဖြေလျှင်၊ မေးခွန်းနံပါတ် ၂၉ သို့သွားပါ)

၂၈။ လက်သည်း ခြေသည်းများ၏ ပြောင်းလဲခြင်းများအတွက် မည်သို့ဆောင်ရွက်နိုင်ပါသနည်း။
၁။ ( ) ပန်းကန်ဆေးလျှင် လက်အိတ်များဝတ်ပါ
၂။ ( ) သင်၏အစားအသောက်များတွင် သံဓာတ်ပါဝင်မှုကို တိုးမြှင့်ပါ
၃။ ( ) ကဖိန်းဓာတ်ကို ရှောင်ကြဉ်ပါ
၄။ ( ) သက်တောင့်သက်သာရှိသော ဖိနပ်များဝတ်ဆင်ပါ
၅။ ( ) မသိပါ

၂၉။ အစားအသောက်ပျက်ခြင်းသည် ကင်ဆာဆေးသွင်းကုသခြင်း၏ အဖြစ်များသော ဘေးထွက်ဆိုးကျိုး ဖြစ်ပါသလား။
၁။ ( ) ဟုတ်ပါသည်
၂။ ( ) မဟုတ်ပါ (မဟုတ်ပါ ဟုဖြေလျှင်၊ မေးခွန်းနံပါတ် ၃၁ သို့သွားပါ)

၃၀။ အစားအသောက်ပျက်ခြင်းအတွက် မည်သို့ဆောင်ရွက်နိုင်ပါသနည်း။
၁။ ( ) မည်မျှစားသုံးမည်ဟူ၍ မကန့်သတ်ပါနှင့်
၂။ ( ) ဗိုက်ဆာချိန်တိုင်းတွင် အဆာပြေမုန့်စားပါ
၃။ ( ) တနေ့တာအတွက် ပမာဏနည်းနည်းနှင့် ၅ ကြိမ်မှ ၆ ကြိမ် အစာစားပါ
၄။ ( ) သင်နှစ်သက်သော အဆာပြေမုန့်များကို အမြဲဆောင်ထားပါ
၅။ ( ) မိသားစု သို့မဟုတ် သူငယ်ချင်းများနှင့် အတူစားရန် ကြိုးစားပါ
၆။ ( ) မသိပါ

၃၁။ ဝမ်းပျက်ခြင်းသည် ကင်ဆာဆေးသွင်းကုသခြင်း၏ အဖြစ်များသော ဘေးထွက်ဆိုးကျိုး ဖြစ်ပါသလား။
၁။ ( ) ဟုတ်ပါသည်
၂။ ( ) မဟုတ်ပါ (မဟုတ်ပါ ဟုဖြေလျှင်၊ မေးခွန်းနံပါတ် ၃၃ သို့သွားပါ)

၃၂။ ဝမ်းပျက်ခြင်းအတွက် မည်သို့ဆောင်ရွက်နိုင်ပါသနည်း။
၁။ ( ) ဆရာဝန်နှင့် တိုင်ပင်ဆွေးနွေးခြင်း
၂။ ( ) ဆေးသောက်ခြင်း
၃။ ( ) မသိပါ

၃၃။ မူးဝေခြင်းသည် ကင်ဆာဆေးသွင်းကုသခြင်း၏ အဖြစ်များသော ဘေးထွက်ဆိုးကျိုး ဖြစ်ပါသလား။
၁။ ( ) ဟုတ်ပါသည်
၂။ ( ) မဟုတ်ပါ (မဟုတ်ပါ ဟုဖြေလျှင်၊ မေးခွန်းနံပါတ် ၃၅ သို့သွားပါ)

၃၄။ မူးဝေခြင်းအတွက် မည်သို့ဆောင်ရွက်နိုင်ပါသနည်း။
၁။ ( ) ဆရာဝန်နှင့် တိုင်ပင်ဆွေးနွေးခြင်း
၂။ ( ) ဟန်ချက်ထိန်းလေ့ကျင့်ခန်းပြုလုပ်ခြင်း
၃။ ( ) မသိပါ

၃၅။ ပျို့ခြင်းနှင့်အန်ခြင်းတို့သည် ကင်ဆာဆေးသွင်းကုသခြင်း၏ အဖြစ်များသော ဘေးထွက်ဆိုးကျိုးများ ဖြစ်ပါသလား။
၁။ ( ) ဟုတ်ပါသည်
၂။ ( ) မဟုတ်ပါ (မဟုတ်ပါ ဟုဖြေလျှင်၊ မေးခွန်းနံပါတ် ၃၇ သို့သွားပါ)

၃၆။ ပျို့ခြင်းနှင့်အန်ခြင်းတို့အတွက် မည်သို့ဆောင်ရွက်နိုင်ပါသနည်း။
၁။ ( ) ဆေးသောက်ခြင်း
၂။ ( ) အရည်များစွာသောက်ခြင်း
၃။ ( ) လေ့ကျင့်ခန်းလုပ်ခြင်း
၄။ ( ) မသိပါ

၃၇။ ခံတွင်းအနာပေါက်ခြင်းနှင့် ခံတွင်းခြောက်ခြင်းတို့သည် ကင်ဆာဆေးသွင်းကုသခြင်း၏ အဖြစ်များသော ဘေးထွက်ဆိုးကျိုးများ ဖြစ်ပါသလား။

၁။ ( ) ဟုတ်ပါသည်

၂။ ( ) မဟုတ်ပါ (မဟုတ်ပါ ဟုဖြေလျှင်၊ မေးခွန်းနံပါတ် ၃၉ သို့သွားပါ)

၃၈။ ခံတွင်းအနာပေါက်ခြင်းနှင့် ခံတွင်းခြောက်ခြင်းတို့အတွက် မည်သို့ဆောင်ရွက်နိုင်ပါသနည်း။

၁။ ( ) အစာစားပြီးနောက် သွားတိုက်ခြင်းနှင့် ဖြည်းညင်းစွာသွားကြားထိုးခြင်း

၂။ ( ) အသီးဖျော်ရည် (သို့) စွတ်ပြုတ်ကဲ့သို့သော ဖျော်ရည် (သို့) အရည်များသည့်အစားအသောက်များ ကို စားသုံးခြင်း

၃။ ( ) ခံတွင်းနှင့်သွားဖုံးတို့ကို ရေခဲဖြင့်ကပ်ပေးခြင်း

၄။ ( ) သကြားမပါသော ဖျော်ရည်များသောက်သုံးခြင်း

၅။ ( ) လေ့ကျင့်ခန်းလုပ်ခြင်း

၆။ ( ) ရေသောက်လျှင် ပိုက်ကိုအသုံးပြုခြင်း

၇။ ( ) မာသော၊ ငန်သော၊ အလွန်စပ်သော၊ အက်ဆစ်ဓာတ်များသော (သို့) ပူသော အစားအသောက်များကို ရှောင်ကြဉ်ခြင်း

၈။ ( ) မသိပါ

၃၉။ ဖျားခြင်းသည် ကင်ဆာဆေးသွင်းကုသခြင်း၏ အဖြစ်များသော ဘေးထွက်ဆိုးကျိုး ဖြစ်ပါသလား။

၁။ ( ) ဟုတ်ပါသည်

၂။ ( ) မဟုတ်ပါ (မဟုတ်ပါ ဟုဖြေလျှင်၊ မေးခွန်းနံပါတ် ၄၁ သို့သွားပါ)

၄၀။ ဖျားခြင်းအတွက် မည်သို့ဆောင်ရွက်နိုင်ပါသနည်း။

၁။ ( ) ဆေးသောက်ခြင်း

၂။ ( ) ရေပတ်တိုက်ခြင်း

၃။ ( ) ဆရာဝန်နှင့် တိုင်ပင်ဆွေးနွေးခြင်း

၄။ ( ) မသိပါ

၄၁။ ဝမ်းချုပ်ခြင်းသည် ကင်ဆာဆေးသွင်းကုသခြင်း၏ အဖြစ်များသော ဘေးထွက်ဆိုးကျိုး ဖြစ်ပါသလား။

၁။ ( ) ဟုတ်ပါသည်

၂။ ( ) မဟုတ်ပါ (မဟုတ်ပါ ဟုဖြေလျှင်၊ မေးခွန်းနံပါတ် ၄၃ သို့သွားပါ)

၄၂။ ဝမ်းချုပ်ခြင်းအတွက် မည်သို့ဆောင်ရွက်နိုင်ပါသနည်း။

၁။ ( ) အမျှင်ဓာတ်များသော အစားအသောက်များ စားသုံးခြင်း

၂။ ( ) အရည်များစွာသောက်ခြင်း

၃။ ( ) အနားယူခြင်း

၄။ ( ) ညင်သာသောလေ့ကျင့်ခန်း ပုံမှန်ပြုလုပ်ခြင်း

၅။ ( ) မသိပါ

၄၃။ မောပန်းနွမ်းနယ်ခြင်းသည် ကင်ဆာဆေးသွင်းကုသခြင်း၏ အဖြစ်များသော ဘေးထွက်ဆိုးကျိုး ဖြစ်ပါသလား။

၁။ ( ) ဟုတ်ပါသည်
၂။ ( ) မဟုတ်ပါ (မဟုတ်ပါ ဟုဖြေလျှင်၊ မေးခွန်းနံပါတ် ၄၅ သို့သွားပါ)

၄၄။ မောပန်းနွမ်းနယ်ခြင်းအတွက် မည်သို့ဆောင်ရွက်နိုင်ပါသနည်း။

၁။ ( ) ဆရာဝန်နှင့် တိုင်ပင်ဆွေးနွေးခြင်း
၂။ ( ) လေ့ကျင့်ခန်း ပြုလုပ်ခြင်း
၃။ ( ) အရည်များစွာသောက်ခြင်း
၄။ ( ) အနားယူခြင်း
၅။ ( ) မသိပါ

ကိုယ်တိုင်အစွမ်း

စဉ်		အပြည့်အဝ သဘောတူ	သဘောတူ	မသေချာ	သဘော မတူ	လုံးဝ သဘောမတူ
၄၅။	ရင်သားကင်ဆာနှင့်ပတ်သက်သော စိုးရိမ်မှုကို ရင်ဆိုင်နိုင်စွမ်းရှိတယ်။	၅	၄	၃	၂	၁
၄၆။	ရင်သားကင်ဆာနှင့်ပတ်သက်သော စိတ်ဓာတ်ကျမှုကို ရင်ဆိုင်နိုင်စွမ်းရှိတယ်။	၅	၄	၃	၂	၁
၄၇။	ဆေးဝါးကုထုံးကြောင့် ပေါ်လာသော ဘေးထွက်ဆိုးကျိုးများကို ခံနိုင်တယ်။	၅	၄	၃	၂	၁
၄၈။	မိသားစုအကူအညီကို ရယူလွယ်တယ်။	၅	၄	၃	၂	၁
၄၉။	မိတ်ဆွေများရဲ့ အကူအညီကို ရယူလွယ်တယ်။	၅	၄	၃	၂	၁
၅၀။	အိမ်နီးနားချင်းများရဲ့ အကူအညီကို ရယူလွယ်တယ်။	၅	၄	၃	၂	၁
၅၁။	မိမိရောဂါ (ရင်သားကင်ဆာ) အတွက် ကုထုံးအသီးသီးမှ ကုထုံးရွေးချယ်ရာတွင် တက်ကြွစွာ ပါဝင်နိုင်တယ်။ ယုံကြည်မှုရှိတယ်။	၅	၄	၃	၂	၁
၅၂။	မိမိရောဂါ (ရင်သားကင်ဆာ) ပျောက်ကင်းဖို့ ကုသရေးဌာန ရွေးချယ်ရာမှာ ကိုယ်တိုင် ပါဝင်နိုင်တယ်။	၅	၄	၃	၂	၁

စာနာစိတ်

စဉ်		ဘယ်တော့မှ မဖြစ်ပါ	ရှားပါးစွာ ဖြစ်တတ်ပါသည်	တခါတရံ ဖြစ်တတ်ပါသည်	မကြာခဏ ဖြစ်တတ်ပါသည်	အမြဲတမ်း ဖြစ်တတ်ပါသည်
၁၃။	တစ်ပါးသူတစ်ယောက် စိတ်လှုပ်ရှားတဲ့အခါ ကျွန်မလည်း စိတ်လှုပ်ရှားမိတယ်။	၀	၁	၂	၃	၄
၁၄။	သူများတွေ အခက်အခဲတွေ့ ဒုက္ခရောက်နေခြင်းသည် ကျွန်မကို အနှောင့်အယှက်မဖြစ်စေပါ။	၄	၃	၂	၁	၀
၁၅။	တစ်စုံတစ်ယောက် မထေမဲ့မြင်ပြုခြင်း ခံရတာကို မြင်တွေ့ရရင် စိတ်မသက်မသာ ဖြစ်မိတယ်။	၀	၁	၂	၃	၄
၁၆။	ရင်းနှီးသူတစ်ယောက် ပျော်ရွှင်နေလဲ ကျွန်မတော့ လိုက်မပျော်ရွှင်ပါ။	၄	၃	၂	၁	၀
၁၇။	တစ်ခြားသူတွေ စိတ်သက်သာအောင် လုပ်ပေးရတာပျော်တယ်။	၀	၁	၂	၃	၄
၁၈။	ကျွန်မလောက်ကံမကောင်းသူတွေအတွက် နှစ်သိမ့်မှုပေးလေ့ရှိတယ်။	၀	၁	၂	၃	၄

သုံးစွဲသူ၏ စိတ်ကျေနပ်မှု (ကူညီဖေးမပေးခြင်းလုပ်ဆောင်ချက်ကို ရရှိမည့်အဖွဲ့)

စဉ်		အလွန် အကျိုးရှိ ပါသည်	အကျိုးရှိ ပါသည်	အသင့် အတင့် အကျိုးရှိ ပါသည်	အကျိုး မရှိပါ	လုံးဝ အကျိုး မရှိပါ
၅၉။ (I)	တစ်ဦးချင်းဆွေးနွေးခြင်းအစီအစဉ်များသည် သင်၏စိတ်ဓာတ် တက်ကြွလာစေဖို့ အကျိုးရှိပါသလား။	၅	၄	၃	၂	၁
၆၀။ (I)	အဖွဲ့လိုက်စုပေါင်းဆွေးနွေးခြင်း အစီအစဉ်များသည် သင်၏စိတ်ဓာတ် တက်ကြွလာစေဖို့ အကျိုးရှိပါသလား။	၅	၄	၃	၂	၁
၆၁။ (I)	တယ်လီဖုန်းဖြင့် သင့်ကို အားပေးကူညီသည့် အစီအစဉ်များသည် သင်၏စိတ်ဓာတ် တက်ကြွလာစေဖို့ အကျိုးရှိပါသလား။	၅	၄	၃	၂	၁

စဉ်		အလွန် ကောင်းပါသည်	ကောင်းပါသည်	အသင့် အတင့် ကောင်းပါသည်	ဆိုးပါသည်	အလွန် ဆိုးပါသည်
၆၂ ။ (I)	သင့်ကို တစ်ဦးချင်းနှစ်သိမ့်ဆွေးနွေး ပေးသူကို သင်မည်သို့ အမှတ်ပေးမည်နည်း။	၅	၄	၃	၂	၁
၆၃ ။ (I)	အဖွဲ့လိုက်စုပေါင်းဆွေးနွေးပွဲ စီစဉ်ပေးသူများကို သင်မည်သို့ အမှတ်ပေးမည်နည်း။	၅	၄	၃	၂	၁
၆၄ ။ (I)	ဖုန်းဆက်အားပေးသူကို သင်မည်သို့ အမှတ်ပေးမည်နည်း။	၅	၄	၃	၂	၁

သုံးစွဲသူ၏ စိတ်ကျေနပ်မှု (နှစ်ဖွဲ့လုံး)

စဉ်		အလွန်အကျိုးရှိပါသည်	အကျိုးရှိပါသည်	အသင့်အတင့်အကျိုးရှိပါသည်	အကျိုးမရှိပါ	လုံးဝအကျိုးမရှိပါ
၆၅။	သင်ခံယူနေကျဆေးကုထုံး (ကုသနည်းများ၊ အကျိုးသက်ရောက်မှု၊ ဘေးထွက်ဆိုးကျိုး) နှင့် ပတ်သက်သော ပညာပေးအစီအစဉ်များသည် သင်၏စိတ်ဓာတ် တက်ကြွလာစေဖို့ အကျိုးရှိပါသလား။	၅	၄	၃	၂	၁
၆၆။	သင်ခံယူနေကျ ကျန်းမာစွာစားသောက်နေထိုင်ပုံအတွက် အကြံပေးမှုများသည် သင်၏စိတ်ဓာတ် တက်ကြွလာစေဖို့ အကျိုးရှိပါသလား။	၅	၄	၃	၂	၁
၆၇။	သင်ခံယူနေကျ ပုံမှန်ကိုယ်လက်လှုပ်ရှားမှုနှင့် ပတ်သက်သော အကြံပေးမှုများသည် သင်၏စိတ်ဓာတ် တက်ကြွလာစေဖို့ အကျိုးရှိပါသလား။	၅	၄	၃	၂	၁

စဉ်		အလွန်ကောင်းပါသည်	ကောင်းပါသည်	အသင့် အတင့်ကောင်းပါသည်	ဆိုးပါသည်	အလွန်ဆိုးပါသည်
၆၈။	ဆေးခန်းမှ သင့်ကို ကုသသောဆရာဝန်ကို သင်မည်သို့ အမှတ်ပေးမည်နည်း။	၅	၄	၃	၂	၁
၆၉။	ဆေးခန်းမှ သင့်ကို စောင့်ရှောက်ပြုစုသော သူနာပြုကို သင်မည်သို့ အမှတ်ပေးမည်နည်း။	၅	၄	၃	၂	၁
၇၀။	ဆေးခန်းတွင် ကုသမှုခံယူနေစဉ်အတွင်း သင်ရရှိသော ဝန်ဆောင်မှုအရပ်ရပ်ကို သင်မည်သို့ အမှတ်ပေးမည်နည်း။	၅	၄	၃	၂	၁

အပိုင်း(၅)

စိတ်ပူပန်ခြင်း

၇၁။ ကျွန်တော်/ကျွန်မ စိတ်တင်းကျပ်နေတယ်
၁။ ( ) အခါခါတိုင်းလိုလို ဖြစ်ပါတယ်
၂။ ( ) အခါခါတော်တော်များများ ဖြစ်ပါတယ်
၃။ ( ) တခါတရံ ဖြစ်ပါတယ်
၄။ ( ) လုံးဝမဖြစ်ပါ

၇၂။ ရင်တွေတုန်တဲ့အထိ ကြောက်ရွံ့မှုတွေ ရှိနေတယ်
၁။ ( ) လုံးဝမရှိပါ
၂။ ( ) တခါတရံ ဖြစ်ပါတယ်
၃။ ( ) မကြာခဏ ဖြစ်ပါတယ်
၄။ ( ) အမြဲလိုလို ဖြစ်ပါတယ်

၇၃။ တစ်ခုခု ဆိုးဆိုးဝါးဝါးဖြစ်တော့မယ့်အတိုင်း ကြောက်ရွံ့နေတယ်
၁။ ( ) သေချာပေါက် တော်တော်ဆိုးဆိုးကို ကြောက်နေတယ်
၂။ ( ) ကြောက်ပါတယ်၊ ဒါပေမယ့် တအားကြီးမဆိုးပါ
၃။ ( ) နည်းနည်းတော့ကြောက်တယ်၊ ဒါပေမယ့် စိတ်မပူပါဘူး
၄။ ( ) လုံးဝမကြောက်ပါ

၇၄။ တစ်ခုခု လုပ်ရတော့မလိုလို စိတ်ဂဏ္ဍာမငြိမ်ဖြစ်နေတယ်
၁။ ( ) အလွန်ပဲ ဖြစ်ပါတယ်
၂။ ( ) အတော်များများ ဖြစ်ပါတယ်
၃။ ( ) အလွန်အမင်းမဖြစ်ပါ
၄။ ( ) လုံးဝမဖြစ်ပါ

၇၅။ ပူပန်တဲ့အတွေးတွေ စိတ်ထဲမှာရှိနေတယ်
၁။ ( ) အခါခါပြည့်နီးပါး ဖြစ်ပါတယ်
၂။ ( ) အခါခါအတော်များများ ဖြစ်ပါတယ်
၃။ ( ) ဖြစ်တော့ဖြစ်တယ်၊ ဒါပေမယ့် မကြာခဏတော့ မဖြစ်ပါ
၄။ ( ) ရံဖန်ရံခါ ဖြစ်ပါတယ်

၇၆။ ရုတ်တရက် စိတ်ခြောက်ခြားမိတယ်
၁။ ( ) ခဏခဏ ဖြစ်ပါတယ်
၂။ ( ) အတော်များများ ဖြစ်ပါတယ်
၃။ ( ) မကြာခဏတော့ မဖြစ်ပါ
၄။ ( ) လုံးဝမဖြစ်ပါ

၇၇။ အေးဆေးထိုင်ပြီး သက်တောင့်သက်သာရှိပါတယ်
၁။ ( ) သိတ်ဟုတ်တာပေါ့၊ လုံးဝကို သက်တောင့်သက်သာပါပဲ
၂။ ( ) ဖြစ်နေကျအတိုင်းပါ
၃။ ( ) မကြာခဏတော့ မဖြစ်ပါ
၄။ ( ) လုံးဝမဖြစ်ပါ

စိတ်ဓာတ်ကျခြင်း

၇၈။ ကျွန်တော်/ကျွန်မ နှေးကွေးသလို ခံစားရတယ်
၁။ ( ) တခွိန်လုံးနီးပါး ဖြစ်ပါတယ်
၂။ ( ) မကြာခဏ ဖြစ်ပါတယ်
၃။ ( ) တခါတရံ ဖြစ်ပါတယ်
၄။ ( ) လုံးဝမဖြစ်ပါ

၇၉။ ခါတိုင်းလိုပဲ ပျော်ပါတယ်
၁။ ( ) သေချာပေါက်ပဲ၊ ခါတိုင်းလိုပဲ ပျော်ပါတယ်
၂။ ( ) အဲဒီလောက်တော့ မဟုတ်ဘူး
၃။ ( ) နည်းနည်းပါပဲ
၄။ ( ) လုံးဝမရှိသလောက်ပါပဲ

၈၀။ မိမိရဲ့ ရုပ်ရည်ပုံသဏ္ဌာန်ကို စိတ်ဝင်စားဂရုစိုက်မှု မရှိတော့ပါ
၁။ ( ) သေချာတယ်၊ စိတ်ဝင်စားမှု မရှိတော့ပါ
၂။ ( ) ဂရုစိုက်သင့်သလောက် မစိုက်ပါ
၃။ ( ) သိပ်ကြီးတော့ဂရုမစိုက်ပါ
၄။ ( ) အရင်ကလိုပဲ ဂရုစိုက်ပါတယ်

၈၁။ အရာတိုင်း၏ ပျော်ရွှင်ဖွယ်ရာများကို ရှုမြင်တတ်ပြီး ရယ်နိုင်ပါတယ်
၁။ ( ) ခါတိုင်းလိုပဲ ရယ်နိုင်ပါတယ်
၂။ ( ) အရင်ကလောက် မရယ်နိုင်ပါ
၃။ ( ) အဲဒီလောက်မဟုတ်တော့တာကတော့ သေချာတယ်
၄။ ( ) လုံးဝမရယ်နိုင်ပါ

၈၂။ အရာတိုင်းကို ပျော်ပျော်ပါးပါးပဲ မျှော်လင့်ထားတယ်
၁။ ( ) အရင်တုန်းကလိုပဲ မျှော်လင့်ထားတယ်
၂။ ( ) အရင်တုန်းကထက် နည်းနည်းတော့ နည်းပါတယ်
၃။ ( ) အရင်တုန်းကထက်တော့ သေချာပေါက်နည်းပါတယ်
၄။ ( ) လုံးဝမရှိသလောက်ပါပဲ

၈၃။ ကျွန်တော်/ကျွန်မ လန်းဆန်းပျော်ရွှင်ပါတယ်
၁။ ( ) လုံးဝမရှိပါ
၂။ ( ) မကြာခဏတော့ မဖြစ်ပါ
၃။ ( ) တခါတရံ ဖြစ်ပါတယ်
၄။ ( ) တခွိန်လုံးနီးပါး ဖြစ်ပါတယ်

၈၄။ စာအုပ်ကောင်းတစ်အုပ်ဖတ်ခြင်း (သို့) ရေဒီယိုနားထောင်ခြင်း (သို့) တီဗီကြည့်ခြင်းဖြင့် ပျော်နိုင်ပါတယ်
၁။ ( ) မကြာခဏ ဖြစ်ပါတယ်
၂။ ( ) တခါတရံ ဖြစ်ပါတယ်
၃။ ( ) မကြာခဏတော့ မဟုတ်ပါ
၄။ ( ) အလွန်ရှားပါးပါတယ်

ဘဝအရည်အသွေး

		လုံးဝ မရှိပါ	အနည်းငယ် ရှိပါသည်	အတန်အသင့် ရှိပါသည်	အလွန်အမင်း ရှိပါသည်
၈၅။	သင်သည် အင်အားသုံးရသော အလုပ်များလုပ်ရာတွင် အခက်အခဲရှိပါသလား။ (ဥပမာ- လေးလံသော ဈေးဝယ်အိတ်၊ ခရီးဆောင်အိတ် စသည်တို့ကို သယ်ယူခြင်း)				
၈၆။	သင်သည် ခပ်ဝေးဝေးလမ်းလျှောက်ရာတွင် အခက်အခဲရှိပါသလား။				
၈၇။	သင်သည် အိမ်အပြင်ဘက် နီးနီးနားနား လမ်းလျှောက်ရာတွင် အခက်အခဲရှိပါသလား။				
၈၈။	သင်သည် နေ့အချိန်တွင် အိပ်ယာထဲလဲလျောင်းနေရန် (သို့) ကုလားထိုင်တွင်ထိုင်၍နေရန် လိုအပ်ပါသလား။				
၈၉။	သင်သည် အစာစားခြင်း၊ အဝတ်လဲခြင်း၊ ရေချိုးခြင်း၊ အိမ်သာတက်ခြင်း စသည့်တို့တွင် အခြားသူ၏အကူအညီရယူရန် လိုအပ်ပါသလား။				

လွန်ခဲ့သော တစ်ပတ်အတွင်းတွင်

		လုံးဝ မရှိပါ	အနည်းငယ် ရှိပါသည်	အတန်အသင့် ရှိပါသည်	အလွန်အမင်း ရှိပါသည်
၉၀။	သင်၏အလုပ် (သို့) အခြားသော နေ့စဉ်လုပ်ငန်းများကို လုပ်ရာတွင် မလုပ်နိုင်သည်များရှိပါသလား။				
၉၁။	သင်၏ဝါသနာများ (သို့) အားလပ်ချိန်တွင် လုပ်တတ်သည့်အရာများကို လုပ်ရာတွင် မလုပ်နိုင်သည်များ ရှိပါသလား။				
၉၂။	မောပန်း၍အသက်ရှူကြပ်ခြင်း ဖြစ်ပါသလား။				
၉၃။	နာကျင်ကိုက်ခဲခြင်း ရှိပါသလား။				
၉၄။	အနားယူဖို့ လိုအပ်ပါသလား။				
၉၅။	အိပ်ရေးပျက်ခြင်း၊ အိပ်မပျော်ခြင်း ရှိပါသလား။				
၉၆။	အားနည်းနေတယ်လို့ခံစားရပါလား။				
၉၇။	အစားအသောက်ပျက်ပါသလား။				
၉၈။	ပျို့ခြင်း ဖြစ်တတ်ပါသလား။				
၉၉။	အန်ခြင်း ဖြစ်တတ်ပါသလား။				
၁၀၀။	ဝမ်းချုပ်ပါသလား။				
၁၀၁။	ဝမ်းလျှော၊ ဝမ်းပျက်ဖြစ်ပါသလား။				

၁၀၂။	အားအင်ကုန်ခမ်း ပင်ပန်းနွမ်းနယ်နေပါသလား။				
		လုံးဝ မရှိပါ	**အနည်းငယ် ရှိပါသည်**	**အတန်အသင့် ရှိပါသည်**	**အလွန်အမင်း ရှိပါသည်**
၁၀၃။	နာကျင်ကိုက်ခဲမှုကြောင့် နေ့စဉ်အလုပ်ကို အနှောင့်အယှက် ဖြစ်ပါသလား။				
၁၀၄။	အာရုံစိုက်ရသည့်အလုပ်များ ဥပမာ- သတင်းစာဖတ်ခြင်း (သို့) ရုပ်မြင်သံကြားကြည့်ခြင်း စသည်တို့တွင် အခက်အခဲရှိပါသလား။				
၁၀၅။	စိတ်တင်းကျပ်ခြင်း ဖြစ်ပါသလား။				
၁၀၆။	စိုးရိမ်ကြောင့်ကြခြင်း ဖြစ်ပါသလား။				
၁၀၇။	စိတ်တိုခြင်း ဖြစ်ပါသလား။				
၁၀၈။	စိတ်ဓာတ်ကျခြင်း ဖြစ်ပါသလား။				
၁၀၉။	အကြောင်းအရာတို့ကို မှတ်မိရန် အခက်အခဲရှိပါသလား။				
၁၁၀။	သင်၏ ကျန်းမာရေးအခြေအနေ (သို့) သင်ရောဂါကုသမှု ခံယူခြင်းသည် သင်၏ မိသားစုဘဝကို အနှောင့်အယှက် ဖြစ်စေပါသလား။				
၁၁၁။	သင်၏ ကျန်းမာရေးအခြေအနေ (သို့) သင်ရောဂါကုသမှု ခံယူခြင်းသည် သင်၏ လူမှုရေးလုပ်ငန်းဆောင်တာများကို အနှောင့်အယှက် ဖြစ်စေပါသလား။				
၁၁၂။	သင်၏ ကျန်းမာရေးအခြေအနေ (သို့) သင်ရောဂါကုသမှု ခံယူခြင်းသည် သင့်ကိုငွေကြေးအခက်အခဲဖြစ်စေပါသလား။				

အောက်ဖော်ပြပါမေးခွန်းများအတွက် နံပါတ် (၁) နှင့် (၇) အတွင်း သင့်အတွက် အကိုက်ညီဆုံးနံပါတ်ကို ဝိုင်းပြပါ။

၁၁၃။ လွန်ခဲ့သောတစ်ပတ်အတွင်း သင်၏အလုံးစုံသောကျန်းမာရေးအခြေအနေကို မည်ကဲ့သို့ အမှတ်ပေးမည်နည်း။

အလွန်ညံ့ အလွန်ကောင်း

၁	၂	၃	၄	၅	၆	၇

၁၁၄။ လွန်ခဲ့သောတစ်ပတ်အတွင်း သင်၏အလုံးစုံသော ဘဝအရည်အသွေးကို မည်ကဲ့သို့ အမှတ်ပေးမည်နည်း။

အလွန်ညံ့ အလွန်ကောင်း

၁	၂	၃	၄	၅	၆	၇

လွန်ခဲ့သော တစ်ပတ်အတွင်းတွင်

		လုံးဝ မရှိပါ	အနည်းငယ် ရှိပါသည်	အတန်အသင့် ရှိပါသည်	အလွန်အမင်း ရှိပါသည်
၁၁၅။	အာခေါင်ခြောက်ခြင်း ဖြစ်ပါသလား။				
၁၁၆။	အစားအသောက်များသည် ယခင်ကထက် အရသာပြောင်းလဲခြင်း ရှိပါသလား။				
၁၁၇။	မျက်လုံးအောင့်ခြင်း၊ ယားယံခြင်း၊ မျက်ရည်ထွက်ခြင်းများ ဖြစ်ပါသလား။				
၁၁၈။	ဆံပင်ကျွတ်ပါသလား။				
၁၁၉။	ဆံပင်ကျွတ်ခြင်းကြောင့် စိတ်ပျက်နေပါသလား။ (ဆံပင်ကျွတ်သည်ဆိုမှဖြေရန်)				
၁၂၀။	နေထိုင်မကောင်းဖြစ်သည်ဟု ခံစားရပါသလား။				
၁၂၁။	ရုတ်တရက် ကိုယ်ပူလာခြင်းကို ခံစားရပါသလား။				
၁၂၂။	ခေါင်းကိုက်ခြင်း ခံစားရပါသလား။				
၁၂၃။	သင်၏ရောဂါကြောင့် (သို့) ရောဂါကုသမှုကြောင့် ဆွဲဆောင်မှုလျော့နည်းသွားသည်ဟု ခံစားရပါသလား။				
၁၂၄။	သင်၏ရောဂါကြောင့် (သို့) ရောဂါကုသမှုကြောင့် ကိုယ့်ကိုကိုယ် မိန်းမ မဆန်တော့ဘူးလို့ ခံစားရပါသလား။				
၁၂၅။	သင့်ကိုယ်သင် အဝတ်မဝတ်ပဲပြန်ကြည့်ရတာ အခက်အခဲရှိပါသလား။				
၁၂၆။	သင်၏ခန္ဓာကိုယ်နှင့်ပတ်သက်၍ စိတ်မကျေနပ်ခြင်းများ ရှိပါသလား။				
၁၂၇။	နောင်တချိန်တွင်ဖြစ်လာမည့် သင်၏ ကျန်းမာရေးအခြေအနေနှင့်ပါတ်သက်၍ စိတ်ပူပန်မှု ရှိပါသလား။				

လွန်ခဲ့သော လေးပတ်အတွင်းတွင်

		လုံးဝ မရှိပါ	အနည်းငယ် ရှိပါသည်	အတန်အသင့် ရှိပါသည်	အလွန်အမင်း ရှိပါသည်
၁၂၈။	လိင်မှုကိစ္စတွင် မည်မျှစိတ်ဝင်စားပါသလဲ။				
၁၂၉။	လိင်မှုကိစ္စတွင် မည်မျှတက်ကြွပါသလဲ။ (လိင်ဆက်ဆံမှု ရှိသည်ဖြစ်စေ၊ မရှိသည်ဖြစ်စေ)				
၁၃၀။	လိင်မှုကိစ္စသည် သင့်အတွက် မည်မျှပျော်ရွှင်ဖွယ် ကောင်းပါသလဲ။ (လိင်မှုကိစ္စတွင် တက်ကြွသည်ဆိုမှသာ ဖြေဆိုရန်)				

လွန်ခဲ့သော တစ်ပတ်အတွင်းတွင်

		လုံးဝ မရှိပါ	**အနည်းငယ် ရှိပါသည်**	**အတန်အသင့် ရှိပါသည်**	**အလွန်အမင်း ရှိပါသည်**
၁၃၁။	လက်မောင်း (သို့) ပုခုံးတွင် နာကျင်ကိုက်ခဲခြင်း ရှိပါသလား။				
၁၃၂။	လက်မောင်း (သို့) လက်တွင် ရောင်ရမ်းခြင်းရှိပါသလား။				
၁၃၃။	လက်မောင်းကိုမြှောက်ရန် (သို့) ဘေးဖက်သို့လွှဲရန် အခက်အခဲရှိပါသလား။				
၁၃၄။	ရောဂါဖြစ်သည့်ဘက်မှ ရင်သားတွင် နာကျင်ကိုက်ခဲခြင်း ရှိပါသလား။				
၁၃၅။	ရောဂါဖြစ်သည့်ဘက်မှ ရင်သားတွင် ရောင်ရမ်းခြင်း ရှိပါသလား။				
၁၃၆။	ရောဂါဖြစ်သည့်ဘက်မှ ရင်သားတွင် အလွန်အမင်းခံစားလွယ်၊ သိလွယ်ခြင်းဖြစ်နေပါသလား။				
၁၃၇။	ရောဂါဖြစ်သည့်ဘက်မှ ရင်သား (သို့) ၎င်း၏ အပေါ်ယံအရေပြားတွင် ယားယံခြင်း၊ အရေပြားခြောက်ခြင်း၊ အရေပြားကွာခြင်း တို့ဖြစ်ပါသလား။				

Appendix D

Selection Criteria for Participants

Inclusion Criteria

No.	Criteria	Eligible	Not Eligible
1	Register for chemotherapy		
2	ECOG performance status 0-2		
3	Age of 18 years and older		
4	Have mobile phone and can communicate		
5	Give written consent		

Exclusion Criteria

No.	Criteria	Eligible	Not Eligible
1	Occurrence of stressful events during the study		
2	Cannot attend the intervention sessions regularly according to the study plan (for intervention group)		

Grade	ECOG Performance Status
0	Fully active, able to carry on all usual activities without restriction and without the aid of analgesics
1	Restricted in strenuous activity but ambulatory and able to carry out light work or pursue a sedentary occupation. This group also contains patients who are fully active, as in grade 0, but only with the aid of analgesics
2	Ambulatory and capable of all self-care but unable to work. Up and about more than 50% of waking hours
3	Capable of only limited self-care; confined to bed or chair more than 50% of waking hours
4	Completely disabled; unable to carry out any self-care and confined totally to bed or chair

Appendix E

Self-Assessment of Counseling Performance Skill by Trainees

No.		Poor		Average		Good
		1	2	3	4	5
1	Ability to demonstrate active attending behavior					
2	Ability to listen to and understand nonverbal behavior					
3	Ability to listen to what client says verbally, noticing mix of experiences, behaviors, and feelings					
4	Ability to understand accurately the client's point of view					
5	Ability to identify themes in client's story					
6	Ability to identify inconsistencies between client's story and reality					
7	Ability to respond with accurate empathy					
8	Ability to ask open-ended questions					
9	Ability to help clients clarify and focus					
10	Ability to balance empathic response, clarification, and probing					
11	Ability to assess accurately severity of client's problems					
12	Ability to establish a collaborative working relationship with client					
13	Ability to assess and activate client's strengths and resources in problem solving					
14	Ability to identify and challenge unhealthy or distorted thinking or behaving					
15	Ability to use advanced empathy to deepen client's understanding of problems and solutions					
16	Ability to explore the counselor–client relationship					
17	Ability to share constructively some of own experiences, behaviors, and feelings with client					

18	Ability to summarize					
19	Ability to share information appropriately					
20	Ability to understand and facilitate decision making					
21	Ability to help clients set goals and move toward action in problem solving					
22	Ability to recognize and manage client reluctance and resistance					
23	Ability to help clients explore consequences of the goals they set					
24	Ability to help clients sustain actions in direction of goals					
25	Ability to help clients review and revise or recommit to goals based on new experiences					
26	Ability to open the session smoothly					
27	Ability to collaborate with client to identify important concerns for the session					
28	Ability to establish continuity from session to session					
29	Ability to keep appropriate records related to counseling process					
30	Ability to end the session smoothly					
31	Ability to recognize and address ethical issues					
32	Ability to integrate privacy practices and informed consent into initial session					

Trainee's signature _____

Supervisor's signature _____

Date _____

သင်တန်းသူ/သားများ၏ နှစ်သိမ့်ဆွေးနွေးခြင်းဆောင်ရွက်မှုအစွမ်းကို ကိုယ်တိုင်အကဲဖြတ်ခြင်း

စဉ်		အနိမ့်ဆုံး		အလယ်အလတ်		အမြင့်ဆုံး
		၁	၂	၃	၄	၅
၁	တက်ကြွစွာ ပါဝင်ဆောင်ရွက်နိုင်မှုကို ဖော်ပြနိုင်စွမ်း					
၂	နှုတ်မှမဲ့ အမူအရာများကို နားလည်နိုင်စွမ်း					
၃	နှုတ်ဖြင့်ပြောလာသော စကားများကို နားထောင်ပြီး လာရောက်ဆွေးနွေးသူ၏ အတွေ့အကြုံ၊ အပြုအမူ၊ ခံစားမှုများကို နားလည်နိုင်စွမ်း					
၄	လာရောက်ဆွေးနွေးသူ၏ ရှုထောင့်အမြင်ကို တိကျစွာ နားလည်နိုင်စွမ်း					
၅	လာရောက်ဆွေးနွေးသူ၏ ပြောစကားများမှ ဇာတ်ကြောင်း (အကြောင်းအရာ)ကို နားလည်နိုင်စွမ်း					
၆	လာရောက်ဆွေးနွေးသူ၏ ပြောပြသော အကြောင်းအရာနှင့် လက်တွေ့ကွာဟမှုကို သိရှိနိုင်စွမ်း					
၇	လာရောက်ဆွေးနွေးသူ၏ ခံစားမှုကို မိမိကိုယ်တိုင်ခံစားရသကဲ့သို့ စာနာနားလည်နိုင်စွမ်း					
၈	အဖွင့်မေးခွန်းများ မေးတတ်ခြင်း					
၉	လာရောက်ဆွေးနွေးသူများအား သူတို့၏အခက်အခဲများကို ရှင်းလင်းစွာသိမြင်ရန်နှင့် ၎င်းတို့ကို အာရုံစိုက်စေနိုင်ရန် ပံ့ပိုးပေးနိုင်စွမ်း					
၁၀	စာနာစိတ်ဖြင့်တုံ့ပြန်ခြင်း၊ ရှင်းရှင်းလင်းလင်းသိမြင်စေခြင်း၊ စူးစမ်းခြင်းတို့ကို မျှတစွာ ထိန်းညှိဆောင်ရွက်နိုင်စွမ်း					
၁၁	လာရောက်ဆွေးနွေးသူ၏ ပြဿနာအတိမ်အနက်ကို တိကျစွာအကဲဖြတ်နိုင်စွမ်း					
၁၂	လာရောက်ဆွေးနွေးသူနှင့် ပူးပေါင်းဆောင်ရွက်နိုင်သည့် ဆက်ဆံရေးမျိုး တည်ဆောက်နိုင်စွမ်း					
၁၃	ပြဿနာဖြေရှင်းရာတွင် လာရောက်ဆွေးနွေးသူ၏ အစွမ်းအစနှင့် အားသာချက်များကို သိရှိနိုင်းဆွေးနွေးနိုင်စွမ်း (သူတို့ကိုယ်တိုင် ကိုယ်တွယ်ဖြေရှင်းနိုင်သည့် အင်အားထုတ်နုတ်ပေးနိုင်စွမ်း)					
၁၄	လာရောက်ဆွေးနွေးသူ၏ ကျန်းမာရေးအတွက် အကျိုးမဲ့စေသောအတွေးမှား၊ အပြုအမူမှားများကို စိစစ်စိန်ခေါ်မှုပေးနိုင်စွမ်း					

၁၅	လာရောက်ဆွေးနွေးသူကိုယ်တိုင် သူ၏ပြဿနာနှင့် ဖြေရှင်းနည်းများကို နက်နက်နဲနဲ ခံစားသိမြင်စေရန် ထူးကဲသောစာနာစိတ်ကို အသုံးပြုကြိုးပမ်းနိုင်စွမ်း					
၁၆	လာရောက်ဆွေးနွေးသူနှင့် နှစ်သိမ့်သူတို့၏ ဆက်ဆံရေးကို စူးစမ်းနိုင်စွမ်း					
၁၇	မိမိကိုယ်တိုင် တွေ့ကြုံခံစားရသည့် အတွေ့အကြုံများ၊ အပြုအမူများ၊ ခံစားမှုများကို လာရောက်ဆွေးနွေးသူနှင့် အကောင်းဘက်မှ မျှဝေခံစားကြည့်နိုင်စွမ်း					
၁၈	ပြောပြီးသမျှ ပြန်လည်အကျဉ်းချုပ်နိုင်စွမ်း					
၁၉	သိရှိသမျှသော အချက်အလက်များကို လာရောက်ဆွေးနွေးသူနှင့် သင့်လျော်စွာ မျှဝေနိုင်စွမ်း					
၂၀	ဆုံးဖြတ်ချက်ချနိုင်ရန် နားလည်စွာ ကူညီပေးနိုင်စွမ်း					
၂၁	လာရောက်ဆွေးနွေးသူများကို ပြဿနာဖြေရှင်း ရာတွင် ဦးတည်ရာပန်းတိုင်သတ်မှတ်စေ၍ ရှေ့သို့ လျှောက်လှမ်းနိုင်စေရန် ကူညီပေးနိုင်စွမ်း					
၂၂	လာရောက်ဆွေးနွေးသူက လုပ်ဆောင်ရန် မဝံ့ရဲခြင်း၊ ဆန့်ကျင်ခြင်းတို့ကို သိမှတ်၍ ကိုင်တွယ်နိုင်စွမ်း					
၂၃	လာရောက်ဆွေးနွေးသူများ ချမှတ်ထားသော ပန်းတိုင်သို့သွားရာတွင် အကျိုးသက်ရောက်မှုများကို စူးစမ်းသိရှိနိုင်စေရန် ကူညီနိုင်စွမ်း					
၂၄	ပန်းတိုင်ဦးတည်လှုပ်ရှားမှုများကို ဆက်လက်တည်တံ့အောင် ကူညီနိုင်စွမ်း					
၂၅	လာရောက်ဆွေးနွေးသူများမှ အတွေ့အကြုံသစ်များ အရ မိမိ၏ပန်းတိုင်ကို ပြန်လည်သုံးသပ်နိုင်စေရန်၊ လိုအပ်သလိုပြုပြင်နိုင်စေရန်နှင့် ပြောင်းလဲနိုင်စေရန် ကူညီနိုင်စွမ်း					
၂၆	နှစ်သိမ့်ဆွေးနွေးခြင်းကို ချောမွေ့စွာ စတင်ဖွင့်လှစ်နိုင်စွမ်း					
၂၇	အရေးပါသည့်ကိစ္စရပ်များအား အတူတကွ ညှိနှိုင်းပြီး နှစ်သိမ့်ဆွေးနွေးပေးနိုင်စွမ်း					
၂၈	နှစ်သိမ့်ဆွေးနွေးချိန် တစ်ချိန်နှင့်တစ်ချိန် ဆက်စပ်ဆောင်ရွက်နိုင်စွမ်း					
၂၉	နှစ်သိမ့်ဆွေးနွေးမှုမှတ်တမ်းကို သင့်လျော်စွာ ထားရှိထိန်းသိမ်းနိုင်စွမ်း					
၃၀	နှစ်သိမ့်ဆွေးနွေးမှုအစီအစဉ်ကို ချောမွေ့စွာ ပိတ်သိမ်းနိုင်စွမ်း					

၃၁	နှစ်သိမ့်ဆွေးနွေးမှုကျင့်ဝတ်များကို သိမှတ်နိုင်စွမ်း					
၃၂	နှစ်သိမ့်ဆွေးနွေးမှု စတင်ချိန်တွင် ပုဂ္ဂလိကလုံခြုံမှုဆိုင်ရာဆောင်ရွက်ခြင်းနှင့် ကြုံတင်သဘောတူညီချက်ရယူခြင်း တို့ကို စုစည်းလုပ်ဆောင်နိုင်စွမ်း					

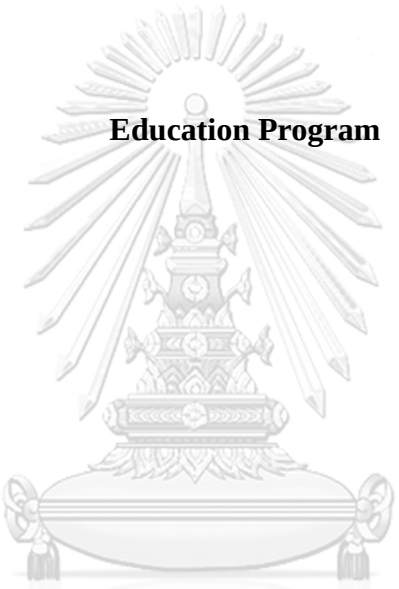
သင်တန်းသူ/သား၏ အမည် နှင့် လက်မှတ် _____

ကြီးကြပ်သူ၏ လက်မှတ် _____

ရက်စွဲ _____

Appendix F

Education Program



Chemotherapy for Breast Cancer

Chemotherapy is treatment with cancer-killing drugs that may be given intravenously (injected into your vein) or by mouth. The drugs travel through the bloodstream to reach cancer cells in most parts of the body.

Possible side effects of chemotherapy for breast cancer

Chemo drugs can cause side effects. These depend on the type and dose of drugs given, and the length of treatment. Some of the most common possible side effects include:

- Hair loss
- Nail changes
- Loss of appetite
- Weight changes
- Diarrhea
- Nausea and vomiting
- Sores mouth or dry mouth
- Constipation
- Fatigue

Chemo can also affect the blood-forming cells of the bone marrow, which can lead to:

- Increased chance of infections (from low white blood cell counts)
- Easy bruising or bleeding (from low blood platelet counts)
- Fatigue (from low red blood cell counts and other reasons)

These side effects usually go away after treatment is finished. There are often ways to lessen these side effects. For example, drugs can be given to help prevent or reduce nausea and vomiting. Other side effects are also possible. Some of these are more common with certain chemo drugs. Ask your cancer care team about the possible side effects of the specific drugs you are getting.

Hair loss

Chemotherapy drugs are powerful medications that attack rapidly growing cancer cells. These drugs also attack other rapidly growing cells in your body — including those in your hair roots. Chemotherapy may cause hair loss all over your body. Sometimes your eyelash, eyebrow, armpit and other body hair also falls out.

Most of the time hair loss from chemotherapy is temporary. Hair usually begins falling out two to four weeks after you start treatment. Your hair loss will continue throughout your treatment and up to a few weeks afterward. It may take several weeks after treatment for your hair to recover and begin growing again. When your hair starts to grow back, it will probably be slightly different from the hair you lost. But the difference is usually temporary. Your new hair might have a different texture or color.

Applying minoxidil — a drug approved for hair loss — to your scalp before and during chemotherapy isn't likely to prevent your hair loss, although it may speed up your hair regrowth.

Your hair loss generally can't be prevented or controlled, but it can be managed. Be gentle to your hair throughout your chemotherapy treatment. Don't bleach, color or perm your hair — this can weaken it. Air-dry your hair as much as possible and avoid heating devices. Use a soft brush. Wash your hair only as often as necessary. Consider using a gentle shampoo.

Nails Changes

During chemotherapy for breast cancer, you may experience problems with the nails on your fingernails and toenails as well.

Nails may darken, turn yellow, become brittle, and crack easily. Some chemo drugs may cause nails to fall off completely.

Dark or light lines may develop across the width of some nails. Nails may develop a concave, spoon-like shape which is caused by anemia and low iron.

Infections under the nails and painful infection surrounding the nails are also possible. It can be caused by either bacteria or fungi. Antibiotics or an antifungal are often prescribed.

If your nails are becoming loose, they may become quite painful, and it will be important to avoid activities which could rip them off too soon.

Chemotherapy-related nail problems are not totally preventable.

Follow these tips for your nails

- Use clear polish to help keep nails strong.
- Avoid artificial nails and colored polish, especially dark colors.
- Wear gloves when washing dishes and gardening.
- Care for nails and cuticles gently.
- Increase iron in your diet.
- Avoid caffeine.
- Wear comfortable shoes that allow adequate room for your toes.

If you believe you may have an infection, pain or discoloration in your nails, contact your oncologist right away and don't wait until your next appointment.

Even if your nails disappear during chemotherapy, your skin and nail cells will start growing again at a healthy rate when treatment ends. New nail tissue will push the damaged nails out of the way. Fingernails grow three times faster than toenails.

Loss of Appetite

Changes in appetite are common with cancer and cancer treatment. People with poor appetite or appetite loss may eat less than usual, not feel hungry at all, or feel full after eating only a small amount. Ongoing appetite loss may lead to serious complications. These include weight loss, not getting the nutrients that the body needs, and fatigue and weakness from muscle loss.

It is important to talk with your health care team if you lose your appetite. They can help find the cause and make sure you are getting the nutrition you need. Poor nutrition can slow recovery and lead to breaks in treatment. Eating well can also help you better cope physically and emotionally with the effects of cancer and cancer treatment.

Consider the following tips for getting proper nutrition when your appetite is low:

- Eat 5 to 6 small meals a day, and snack whenever you are hungry.
- Do not limit how much you eat.
- Eat nutritious snacks that are high in calories and protein. This includes dried fruits, nuts, yogurt, cheeses, eggs, milkshakes, ice cream and pudding.
- Keep your favorite foods on hand for snacking.
- Increase the calories and protein in foods.
- Drink larger amounts of fluids between meals, rather than with meals, which may make you feel full too quickly.
- Choose nutritious or filling drinks, such as milk or nutritional milkshakes or smoothies.
- Try to eat in pleasant surroundings and with family or friends.
- Try placing food on smaller plates rather than larger plates.
- If the smell or taste of food makes you nauseous, eat food that is cold or at room temperature. This will decrease its odor and reduce its taste.
- If you have changes in taste, such as a metallic taste in your mouth, try sucking on hard candy such as mints or lemon before eating a meal.
- Ask your doctor about ways to relieve gastrointestinal symptoms, such as nausea, vomiting, and constipation. Also tell your doctor if you are having any difficulty with managing pain.
- Try light exercise, such as a 20-minute walk, about an hour before meals to stimulate your appetite. Consult your health care team before starting an exercise program. Exercise also helps maintain muscle mass.

Weight changes

Chemotherapy may directly or indirectly cause weight gain or weight loss. Slight fluctuations (a few pounds) in your weight, after chemotheraphy, either up or down, are not dangerous. However, significant chemotheraphy weight loss or weight gain may affect your health and/or your ability to tolerate your treatments.

Chemotherapy Weight Gain

Some chemotherapy may contribute to weight gain. Weight gain after chemo may happen for a variety of reasons including:

- Less activity. People tend to exercise less while taking chemotherapy.
- Eating more. Some medications actually increase the appetite.
- Fluid retention. Some chemotherapy weight gain is caused by fluid retention in your body.
- Increased fatty tissue. Some chemotherapy regimens may contain steroids. Steroids can cause fat deposits to develop. Some people also experience a round or full face. These side effects occur most often with long-term steroid use is expected and will go away once steroids are discontinued.

Things you can do to manage chemotherapy weight gain

- Try to maintain your normal weight, if you are not overweight. If you notice weight gain after chemo, try to modify your diet to nutritious, low-calorie foods such as vegetables, fruits, low-fat cheeses, etc.
- Avoid concentrated sweets such as sugar, honey, and candy.
- Try to exercise, as tolerated. Make sure to exercise, under the supervision of your healthcare team. Walking, swimming, or light aerobic activity may help you to lose the chemo weight, and promote the flow of oxygen in your lungs and blood.
- Participate in activities that take your mind off of food.

Chemotherapy Weight Loss

Weight loss is most often associated with dieting. However, weight loss after chemotherapy is associated with side effects of chemo that can sometimes interfere with your ability to eat or drink and affect your ability to maintain your healthy weight.

Symptoms of Chemotherapy Weight Loss

If you are experiencing side effects or feel that you might be losing weight, you should weigh yourself. If you have lost 5 or more pounds in a week, you should notify your doctor or health care team about your chemo weight loss.

Things you can do to manage chemotherapy weight loss

- Try to maintain your normal weight.
- Treating your chemo weight loss depends upon treating the underlying cause. If you are experiencing side effects that are contributing to your weight loss, please consult with your doctor.
- Increase calories and protein in your diet.

Note: We strongly encourage you to talk with your health care professional about your specific medical condition and treatments.

Fatigue

Fatigue is another common problem for women who have received chemo. This may last up to several years. It can often be helped, so it's important to let your doctor or nurse know about it. Exercise, naps, and conserving energy may be recommended. If you have sleep problems, they can be treated. Sometimes women become depressed, which may be helped by counseling and/or medicines.

Healthy Eating

Fruits, vegetables and whole grains are suitable for cancer patients. We recommend five or more servings of fruit and vegetables daily. Whole grains are unprocessed foods that are high in complex carbohydrates, fiber, vitamins, minerals and phytochemicals. High fiber intake may have a positive benefit by altering hormonal actions of breast cancer and other hormonal-dependent cancers. Daily fiber intake should be about 30 grams.

Have some dairy or dairy alternatives (such as yoghurts). Choose lower-fat and lower-sugar options. Have some eggs and olive oil. In addition to this, the patient should eat foods that are high in sugar less often and in small amounts, choose unsaturated oils and spreads. Avoid eating foods that are high in salt or fat too often.

Foods by Plant Family

- Wheat, rice, corn, barley, potatoes, bread, pasta and other carbohydrates
- Lettuce, spinach, romaine
- Broccoli, cabbage, turnip, cauliflower, kohlrabi, bok choy
- Celery, parsley, fennel, carrots
- Garlic, onion, shallots, chives, leek
- Soybeans, peas, chickpeas, lima beans, peanut, dried beans (kidney, mung, pinto), lentils and nuts
- eggplant, tomatoes
- pumpkin, squash, cucumber, muskmelon, watermelon

Cancer-Fighting Food Source

- Broccoli sprouts
- Mustard
- Garlic, green tea, soybeans, ginger, pepper, flax seed, legumes
- Most fruits and vegetables (citrus fruits, caraway seeds, sage, camphor, dill, basil, mint)
- Onion, leeks, shallots
- Dark yellow/orange/green vegetables and fruits

During chemotherapy, the patient may be able to eat normally throughout the treatment, or the side effects may change patient's eating habits. If appetite is small, eating little and often can be better than facing a large meal. Patient could try:

- Eat five to six small meals each day instead of three big meals.
- Drink milkshakes, smoothies, juice or soup if the patient doesn't feel like eating solid food.
- Do something active, if the patient feels able to, as exercise can help increase appetite. Patient might have more of an appetite if she takes a short walk before lunch.

Be careful not to reduce appetite by drinking too much liquid before or during meals. If appetite is increased during chemotherapy, patient should:

- choose low-fat foods and drinks
- eat plenty of fresh fruit and vegetables
- watch out for the sugar content of food
- avoid sugary drinks

Fat Intake Recommendations

- Limit the intake of highly saturated foods such as beef, lamb, organ meats, cheeses, butter, ice cream
- Decrease food containing trans fatty acids, such as baked goods (e.g. bread, cake), crackers and margarine.
- Increase your intake of poultry, fish and vegetarian proteins (legumes and lentils). Increasing your intake of fish to 3 times per week may inhibit the growth of breast tumors.

Healthy Body Weight

Overweight or obese are defined by body mass index (BMI). BMI is calculated based on height and weight. We recommend weight reduction by diet modification first, followed by the introduction of exercise.

BMI	Classification
$\leq 18{\cdot}49$ kg/m^2	Under Weight
$18{\cdot}5–24{\cdot}9$ kg/m^2	Normal Range
≥ 25 kg/m^2	Over Weight
≥ 30 kg/m^2	Obesity

Alcohol Consumption

Breast cancer patients should avoid alcohol.

Nausea and vomiting

Nausea and vomiting can be a problem for some people during and after their chemotherapy treatments. Drugs can help with nausea and vomiting. Drink plenty of fluids, such as water or herbal teas. Taking frequent sips is better than trying to drink large amounts in one time. Eating little and often is a good way to combat nausea. Herbal teas such as mint or ginger can also help settle the stomach.

Sore mouth or dry mouth

For sore mouth or dry mouth:

- Clean the teeth or dentures with a soft brush after eating, and floss gently.
- Choose soft or liquid foods such as soups, stews, smoothies and desserts.
- Soothe the mouth and gums with ice cubes.
- Drink sugar-free fizzy drinks to freshen the mouth.
- Use a straw to drink.
- Avoid crunchy, salty, very spicy or hot foods.

Taste changes

Your taste may change during chemotherapy, making foods taste bland or different. You may prefer to eat strongly flavoured foods, and using herbs and spices in cooking may help. Try a variety of foods to find the ones you like the best. As well as going off your usual foods, you may find that you like foods that you previously did not like.

Some types of chemotherapy can give you a metal taste in your mouth. Using plastic cutlery, instead of metal, can help reduce the metal taste. Using glass pots and pans to cook with can also help.

Constipation

Eating and drinking less than usual, being less active and taking certain medications can all lead to constipation. Consuming high-fibre foods can help if you're constipated. These include wholemeal bread, beans and lentils, vegetables, fresh fruits and dried fruit.

You should also drink plenty of fluids and do some regular, gentle exercise such as walking. If you're still having problems with constipation, ask your doctor for advice.

Diarrhoea

Occasionally, some chemotherapy drugs can cause diarrhoea. Your doctor can prescribe medication for diarrhoea if necessary. Contact your chemotherapy team if you have four or more episodes of diarrhoea within a 24-hour period.

Others

It's important to have fresh food in your diet, but if you can't shop regularly, frozen and tinned fruit and vegetables are full of nutrients and can be eaten every day.

If you're already following a specific diet because you have a medical condition – such as diabetes – having breast cancer doesn't mean your diet has to change. If you need more information, talk to your cancer specialist team.

Physical Activity

Side effects from chemotherapy vary from person to person. You may feel extremely tired during your treatment, and there may also be periods when you feel sick. There will be times when you do feel able to do some type of physical activity. Gentle exercise, such as walking, can boost your energy and help make you feel less tired.

You may be advised to avoid swimming while having chemotherapy. This is because chemotherapy affects your immune system's ability to fight infection, which might make you more susceptible to any germs in the water.

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ပညာပေးအစီအစဉ်

ရင်သားကင်ဆာရောဂါအတွက် ကင်ဆာဆေးသွင်းကုသခြင်း

ကင်ဆာဆေးသွင်းကုသခြင်းသည် ကင်ဆာဆဲလ်များကို နှိမ်နင်းသည့်ဆေးများဖြင့်ကုသခြင်းဖြစ်ပြီး အကြောဆေး (သွေးပြန်ကြောအတွင်းသို့ ထိုးသွင်းခြင်း) အနေဖြင့်ဖြစ်စေ၊ သောက်ဆေးအနေဖြင့်ဖြစ်စေ ပေးလေ့ရှိပါသည်။ ဆေးများသည် သွေးကြောများတလျှောက်သွား၍ ခန္ဓာကိုယ်အနှံ့ရှိ ကင်ဆာဆဲလ်များဆီသို့ ရောက်ရှိပါသည်။

ရင်သားကင်ဆာအတွက် ကင်ဆာဆေးသွင်းကုသခြင်း၏ ဖြစ်နိုင်ဖွယ်ရှိသော ဘေးထွက်ဆိုးကျိုးများ

ကင်ဆာဆေးသွင်းကုသခြင်းသည် ဘေးထွက်ဆိုးကျိုးများကို ဖြစ်ပေါ်စေနိုင်သည်။ ဖြစ်ပွားတတ်သော ဘေးထွက်ဆိုးကျိုးများသည် ပေးသည့်ဆေးအမျိုးအစား၊ ပမာဏနှင့် ကုသသည့်ကာလတို့အပေါ်တွင် မူတည်ပါသည်။ အများအားဖြင့် ဖြစ်တတ်သော ဘေးထွက်ဆိုးကျိုးများတွင်-

- ဆံပင်ကျွတ်ခြင်း
- လက်သည်း၊ ခြေသည်း ပြောင်းလဲခြင်းများ
- အစားအသောက်ပျက်ခြင်း
- ကိုယ်အလေးချိန် ပြောင်းလဲခြင်းများ
- ဝမ်းလျှောခြင်း
- ပျို့ခြင်းနှင့် အန်ခြင်း
- ပါးစပ်တွင် အနာဖြစ်ခြင်း (သို့) ပါးစပ်ခြောက်ခြင်း
- ဝမ်းချုပ်ခြင်း
- ပင်ပန်းနွမ်းနယ်ခြင်း တို့ပါဝင်သည်။

ကင်ဆာဆေးသွင်းကုသခြင်းသည် ရိုးတွင်းချဉ်ဆီမှ သွေးဆဲလ်များဖြစ်ပေါ်ခြင်းအပေါ် အကျိုးသက်ရောက်မှု ရှိပြီး အောက်ပါတို့ကို ဆက်လက်ဖြစ်ပွားစေနိုင်ပါသည်-

- ရောဂါကူးစက်နိုင်ခြေမြင့်လာခြင်း (သွေးဖြူဥအရေအတွက် လျော့နည်းခြင်းကြောင့်)
- အလွယ်တကူ အညိုအမည်းစွဲခြင်း သို့မဟုတ် အလွယ်တကူ သွေးထွက်ခြင်း (သွေးပွားအရေအတွက် လျော့နည်းခြင်းကြောင့်)
- ပင်ပန်းနွမ်းနယ်ခြင်း (သွေးနီဥအရေအတွက် လျော့နည်းခြင်းနှင့် အခြားအကြောင်းများကြောင့်)

ကုသမှုပြီးဆုံးပါက အဆိုပါ ဘေးထွက်ဆိုးကျိုးများမှာ ပျောက်ကွယ်သွားလေ့ရှိသည်။ ထိုဘေးထွက်ဆိုးကျိုးများ လျော့ပါးသက်သာစေရန် ဆောင်ရွက်နိုင်သော နည်းလမ်းများရှိပါသည်။ ဥပမာအားဖြင့် ပျို့ခြင်း၊ အန်ခြင်းများကို ကာကွယ်ရန် (သို့) လျော့ပါးစေရန် ဆေးဝါးများပေးနိုင်သည်။ အခြားသော ဘေးထွက်ဆိုးကျိုးများလည်း ဖြစ်ပေါ်လာနိုင်သေးသည်။ အချို့မှာ ၎င်းတို့နှင့် သက်ဆိုင်ရာ

ကင်ဆာဆေးများအလိုက် အဖြစ်များကြသည်။ သင်ရရှိနေသောဆေးများ၏ ဖြစ်နိုင်သော ဘေးထွက်ဆိုးကျိုးများအကြောင်းကို သင်၏ ကင်ဆာကုသမှုအဖွဲ့အား မေးပါ။

ဆံပင်ကျွတ်ခြင်း

ကင်ဆာဆေးများသည် လျင်မြန်စွာ ပွားများနေသော ကင်ဆာဆဲလ်များကို တိုက်ခိုက်သည့် အစွမ်းထက်ဆေးများဖြစ်ကြသည်။ ထိုဆေးများသည် သင်၏ဆံပင်အမြစ်များရှိ ဆဲလ်များအပါအဝင် သင့်ခန္ဓာကိုယ်အတွင်း လျင်မြန်စွာပွားများနေသော အခြားဆဲလ်များကိုလည်း တိုက်ခိုက်သည်။ ကင်ဆာဆေးသွင်းကုသခြင်းသည် သင်၏ခန္ဓာကိုယ်အနှံ့အပြားရှိ အမွေးများကိုကျွတ်စေနိုင်သည်။ တခါတရံ သင်၏ မျက်တောင်မွေး၊ မျက်ခုံးမွေး၊ ချိုင်းမွေးနှင့် အခြားအမွေးများကိုလည်း ကျွတ်စေသည်။

ကင်ဆာဆေးသွင်းကုသခြင်းကြောင့် ဆံပင်ကျွတ်ခြင်းသည် အများအားဖြင့် ယာယီသာဖြစ်ပါသည်။ ကုသမှုစပြီးနောက် နှစ်ပတ်မှ လေးပတ်အကြာတွင် အမွေးများ စတင်ကျွတ်လေ့ရှိသည်။ ဆံပင်ကျွတ်ခြင်းသည် ဆေးကုသမှုကာလတစ်လျှောက်နှင့် ကုသမှုပြီးနောက် ရက်သတ္တပတ်အနည်းငယ်အထိ ဆက်လက်ဖြစ်ပွားနိုင်သည်။ ကုသမှုပြီးနောက် ဆံပင်ပြန်ပေါက်ရန်အတွက် ရက်သတ္တပတ်အနည်းငယ်ကြာနိုင်သည်။ သင်၏ဆံပင်များ ပြန်ပေါက်လာလျှင် ထိုဆံပင်များသည် သင်ကျွတ်ခဲ့သောဆံပင်များနှင့် ကွာခြားမှုအနည်းငယ် ရှိနိုင်ပါသည်။ သို့သော် ကွာခြားမှုမှာ ယာယီသာဖြစ်ပါသည်။ ဆံပင်အသစ်များတွင် ကွဲပြားသော အရောင်အသွေးရှိနေနိုင်ပါသည်။

ကင်ဆာဆေးသွင်းကုသခြင်း မစတင်မီနှင့် ကုသနေစဉ်အတွင်း ဆံပင်ကျွတ်ခြင်းအတွက် သုံးစွဲနိုင်သည့် Minoxidil ဆေးကို ဦးရေပြားသို့လိမ်းပေးခြင်းသည် ဆံပင်လျင်မြန်စွာပြန်ပေါက်စေနိုင်သော်လည်း ဆံပင်ကျွတ်ခြင်းကို ကာကွယ်နိုင်ရန် မသေချာပါ။

ဆံပင်ကျွတ်ခြင်းကို ယေဘုယျအားဖြင့် ကာကွယ်ခြင်း၊ ထိန်းချုပ်ခြင်းမပြုနိုင်သော်လည်း ကိုင်တွယ်ဆောင်ရွက်နိုင်ပါသည်။ ကင်ဆာဆေးသွင်းကုသစဉ်ကာလတစ်လျှောက် ဆံပင်ကို ညင်သာစွာကိုင်တွယ်ပါ။ အရောင်ချွတ်ခြင်း၊ ဆေးဆိုးခြင်း (သို့) ကောက်ခြင်းမပြုပါနှင့်။ ဆံပင်ကို အားနည်းသွားစေပါသည်။ ဖြစ်နိုင်သမျှ လေဖြင့်သာအခြောက်ခံပြီး၊ အပူပေးသည့်စက်များကို ရှောင်ကြဉ်ပါ။ နူးညံ့သော ခေါင်းဘီးကိုသုံးပါ။ လိုအပ်သလောက်သာ ခေါင်းလျှော်ပါ။ ခေါင်းလျှော်ရည်ပျော့ပျော့သုံးပါ။

လက်သည်း၊ ခြေသည်းပြောင်းလဲခြင်းများ

ရင်သားကင်ဆာအတွက် ကင်ဆာဆေးသွင်းကုသနေစဉ်အတွင်း လက်သည်း၊ ခြေသည်းတို့နှင့် ပတ်သက်သော ပြဿနာများလည်း ကြုံတွေ့ရနိုင်ပါသည်။

လက်သည်း၊ ခြေသည်းများ မည်းလာခြင်း၊ အဝါရောင်ပြောင်းသွားခြင်း၊ ကြွပ်ဆတ်ခြင်း၊ လွယ်ကူစွာကျိုးနိုင်ခြင်းတို့ ဖြစ်တတ်သည်။ အချို့ ကင်ဆာဆေးများမှာ လက်သည်း၊ ခြေသည်းများကို လုံးဝ ကျွတ်ကျသွားစေနိုင်သည်။

အချို့ လက်သည်း၊ ခြေသည်းများတွင် ကန့်လန့်ဖြတ်လျက် အမည်း (သို့) အရောင်ဖျော့ မျဉ်းကြောင်းများ ပေါ်လာတတ်သည်။

သွေးအားနည်းခြင်း (သို့) သံဓာတ်နည်းခြင်းကြောင့် လက်သည်း၊ ခြေသည်းများသည် ဇွန်းပုံသဏ္ဍာန် အခွက်များဖြစ်လာတတ်သည်။

လက်သည်း၊ ခြေသည်းအောက်တွင် ပိုးဝင်ခြင်းနှင့် လက်သည်း၊ ခြေသည်းပတ်လည်တွင် နာကျင်သော ပိုးဝင်ခြင်းတို့လည်း ဖြစ်နိုင်သည်။ ၎င်းတို့သည် ဘက်တီးရီးယား သို့မဟုတ် မှိုတို့ကြောင့် ဖြစ်နိုင်သည်။ ပိုးသတ်ဆေးနှင့် မှိုသတ်ဆေးများ ပေးလေ့ရှိသည်။

လက်သည်း၊ ခြေသည်းများ ချောင့်ချွတ်လာပါက အလွန်နာကျင်လာတတ်ပါသည်။ ၎င်းတို့ ကျွတ်ထွက်သွားစေမည့် အပြုအမူတို့ကို ရှောင်ကြဉ်ရန် အရေးကြီးပါသည်။

ကင်ဆာဆေးကြောင့်ဖြစ်သော လက်သည်း၊ ခြေသည်းပြဿနာများမှာ ကာကွယ်ခြင်းမပြုနိုင်ပါ။

သင်၏ လက်သည်း၊ ခြေသည်းများအတွက် အောက်ပါအချက်များကို လိုက်နာပါ

- လက်သည်း၊ ခြေသည်းများ သန့်မာစေရန် အရောင်တင်ဆီ အကြည်ကို အသုံးပြုပါ။
- လက်သည်း၊ ခြေသည်း အတုများနှင့် အရောင်ပါသော အရောင်တင်ဆီများ (အထူးသဖြင့် အမည်းရောင်) ကို ရှောင်ကြဉ်ပါ။
- ပန်းကန်ဆေးခြင်း၊ အပင်စိုက်ခြင်းများ ပြုလုပ်ပါက လက်အိတ်များဝတ်ဆင်ပါ။
- လက်သည်းနှင့် လက်ပန်းကုံးများကို ညင်သာစွာ ပြုစုစောင့်ရှောက်ပါ။
- သင်၏ အစားအသောက်တွင် သံဓာတ်ပါဝင်မှု များပါစေ။
- ကဖိန်းဓာတ်ပါဝင်သော အစားအသောက်များကို ရှောင်ကြဉ်ပါ။
- သင်၏ ခြေချောင်းများအတွက် လုံလောက်စွာ ကျယ်ဝန်းသည့် သက်တောင့်သက်သာရှိသော ဖိနပ်များကို ဝတ်ဆင်ပါ။

သင်၏ လက်သည်း၊ ခြေသည်းများတွင် ပိုးဝင်ခြင်း၊ နာကျင်ခြင်း (သို့) အရောင်ပြယ်ခြင်းများဖြစ်ပေါ်ပါက သင်၏ကင်ဆာဆရာဝန်နှင့် ချက်ခြင်းဆက်သွယ်ပါ။ နောက်တစ်ကြိမ်ချိန်းဆိုချိန်အထိ မစောင့်ပါနှင့်။

ကင်ဆာဆေးသွင်းကုသနေစဉ်အတွင်း လက်သည်း၊ ခြေသည်းများ ဆုံးရှုံးသွားပါကလည်း ကုသမှုပြီးဆုံးချိန်တွင် သင်၏အရေပြားနှင့် လက်သည်းဆဲလ်များမှာ ကျန်းမာစဉ်ကအတိုင်း ပြန်လည် ဖြစ်ပေါ်လာပါလိမ့်မည်။ လက်သည်းတစ်ရှူးအသစ်များက ပျက်စီးနေသော လက်သည်းများကို တွန်းထုတ်ပါလိမ့်မည်။ လက်သည်းများ ပြန်လည်ဖြစ်ပေါ်ခြင်းသည် ခြေသည်းများထက် သုံးဆပိုမြန်ပါသည်။

အစားအသောက်ပျက်ခြင်း

ကင်ဆာရောဂါနှင့် ကင်ဆာကုသခြင်းတို့တွင် အစာစားချင်စိတ်ပြောင်းလဲခြင်းများ အဖြစ်များပါသည်။ အစာစားချင်စိတ် လျော့နည်းလာသူများနှင့် အစားအသောက်ပျက်သူများတွင် ပုံမှန်ထက် လျော့နည်းစားသုံးခြင်း၊ လုံးဝ ငိုက်မဆာခြင်း (သို့) ပမာဏအနည်းငယ်သာ စားသုံးပြီးနောက် ငိုက်ဝသွားခြင်းတို့ ဖြစ်ပေါ်လေ့ရှိသည်။ အစားအသောက်ပျက်ခြင်း ဆက်လက်ဖြစ်ပေါ်နေပါက

ပြင်းထန်သော နောက်ဆက်တွဲ ဆိုးကျိုးများကို ဖြစ်ပေါ်စေနိုင်သည်။ ကိုယ်အလေးချိန်ကျဆင်းခြင်း၊ ခန္ဓာကိုယ်အတွက်လိုအပ်သော အာဟာရဓာတ်များ မရရှိခြင်း၊ ကြွက်သားများဆုံးရှုံးခြင်းကြောင့် မောပန်းနွမ်းနယ်ခြင်း၊ အားနည်းခြင်းတို့ ဖြစ်ပွားတတ်သည်။

အစားအသောက်ပျက်ပါက သင်၏ ကျန်းမာရေးစောင့်ရှောက်မှုအဖွဲ့နှင့် ဆွေးနွေးရန် အရေးကြီးပါသည်။ ၎င်းတို့က အကြောင်းရင်းကို ရှာဖွေခြင်း၊ သင်လိုအပ်သော အာဟာရဓာတ်များ ရရှိစေရေးတို့အတွက် ကူညီပေးနိုင်ပါသည်။ အာဟာရချို့တဲ့ပါက ရောဂါပြန်လည်ပျောက်ကင်းရန် နှေးကွေးစေပြီး ကုသမှုကိုလည်း အဆက်ပြတ်စေပါသည်။ အစားအသောက်ကို ကောင်းစွာစားသုံးခြင်းဖြင့် ကင်ဆာရောဂါနှင့် ကင်ဆာကုသမှုတို့၏ ဆိုးကျိုးများကို ကိုယ်ရောစိတ်ပါ ခံနိုင်ရည်ရှိလာစေပါသည်။

စားသောက်ချင်စိတ် လျော့နည်းနေပါက အာဟာရပြည့်ဝစေရန် အောက်ပါအချက်များကို ဂရုပြုပါ။

- တစ်နေ့လျှင် အစားအစာပမာဏ နည်းနည်းဖြင့် (၅)ကြိမ်မှ (၆)ကြိမ်စားပါ။ ဗိုက်ဆာချိန်တိုင်း အဆာပြေမုန့်စားပါ။
- မည်ရွေ့မည်မျှ စားမည်ဟူ၍ မကန့်သတ်ပါနှင့်။
- ကယ်လိုရီနှင့် ပရိုတိန်း အများအပြားပါဝင်သော အာဟာရပြည့်သည့် အဆာပြေမုန့်များ စားပါ။ အသီးခြောက်များ၊ အခွံမာသီးများ၊ ဒိန်ချဉ်၊ ချိစ်၊ ဥများ၊ နို့ဖျော်ရည်၊ ရေခဲမုန့်၊ ပူတင်း စသည်တို့ ပါဝင်သည်။
- သင်ကြိုက်နှစ်သက်သော အစားအသောက်များကို အဆာပြေစားရန် အမြဲဆောင်ထားပါ။
- အစားအသောက်များတွင် ကယ်လိုရီနှင့် ပရိုတိန်းပါဝင်မှု များပါစေ။
- အစားစာချိန်များအကြားတွင် အရည်မြောက်များစွာ သောက်သုံးပါ။ ဤကဲ့သို့သောက်ပါက လျင်မြန်စွာ ဗိုက်ပြည့်စေနိုင်သဖြင့် အစာစားချိန်တွင် မသောက်ပါနှင့်။
- နို့၊ အာဟာရပြည့်နို့ဖျော်ရည်များ၊ အသီးဖျော်ရည်များကဲ့သို့သော အာဟာရပြည့်ဝသည့် ဖျော်ရည်များကို ရွေးချယ်ပါ။
- သာယာသော ပတ်ဝန်းကျင်တွင် စားသောက်ရန်နှင့် မိသားစု (သို့) သူငယ်ချင်းများနှင့်အတူ စားသောက်ရန် ကြိုးစားပါ။
- ပန်းကန်အကြီးများထက်စာလျှင် ပန်းကန်အသေးများတွင် အစားအသောက်များကို ထည့်ရန် ကြိုးစားပါ။
- အစားအသောက်များ၏ အနံ့နှင့်အရသာတို့ကြောင့် ပျို့နေပါက အေးနေသော (သို့) အခန်းအပူချိန်တွင်ရှိသော အစားအသောက်များကိုစားပါ။ အနံ့နှင့်အရသာတို့ကို ထိုကဲ့သို့ လျှော့ချ နိုင်ပါသည်။
- ပါးစပ်အတွင်းတွင် သတ္တုအရသာရရှိနေခြင်း စသည်ဖြင့် အရသာပြောင်းလဲခြင်းများရှိပါက အစာမစားမီတွင် ပူစီနံ (သို့) သံပုယိုသီးအရသာ သကြားလုံးများစားပေးပါ။
- ပျို့ခြင်း၊ အန်ခြင်း၊ ဝမ်းချုပ်ခြင်း စသည့် အစာအိမ်အူလမ်းကြောင်းဆိုင်ရာလက္ခဏာများ သက်သာစေမည့် နည်းလမ်းများကို သင်၏ဆရာဝန်အား မေးမြန်းပါ။ နာကျင်မှုသက်သာအောင် ဆောင်ရွက်ရာတွင် အခက်အခဲရှိပါကလည်း သင်၏ဆရာဝန်ကိုပြောပါ။
- အစာစားချင်စိတ်ဖြစ်ပေါ်စေရန် အစာမစားမီတစ်နာရီခန့်တွင် မိနစ် (၂၀)ခန့် လမ်းလျှောက်ခြင်း ကဲ့သို့သော ပေါ့ပါးသည့် လေ့ကျင့်ခန်းများကို ပြုလုပ်ပါ။ လေ့ကျင့်ခန်းအစီအစဉ် မစတင်မီ သင်၏ ကျန်းမာရေးစောင့်ရှောက်မှုအဖွဲ့နှင့် တိုင်ပင်ပါ။ လေ့ကျင့်ခန်းပြုလုပ်ခြင်းဖြင့် ကြွက်သားထုကို ထိန်းသိမ်းထားနိုင်ပါသည်။

ကိုယ်အလေးချိန်ပြောင်းလဲခြင်းများ

ကင်ဆာဆေးသွင်းကုသခြင်းသည် တိုက်ရိုက်ဖြစ်စေ၊ သွယ်ဝိုက်၍ဖြစ်စေ၊ ကိုယ်အလေးချိန်တိုးလာခြင်း (သို့) ကိုယ်အလေးချိန်ကျဆင်းခြင်းတို့ကို ဖြစ်ပေါ်စေသည်။ ကင်ဆာဆေးသွင်းကုသပြီးနောက် ကိုယ်အလေးချိန် တက်သည်ဖြစ်စေ၊ ကျသည်ဖြစ်စေ၊ ပေါင်ချိန်အနည်းငယ် ပြောင်းလဲခြင်းသည် အန္တရာယ်မရှိပါ။ သို့သော် ကင်ဆာဆေးကြောင့် သိသာထင်ရှားစွာ ကိုယ်အလေးချိန်တက်ခြင်း (သို့) ကျခြင်းတို့သည် သင်၏ ကျန်းမာရေးနှင့် ကုထုံးအပေါ် ခံနိုင်ရည်ရှိမှုတို့ကို ဆိုးကျိုးများ သက်ရောက်စေနိုင်သည်။

ကင်ဆာဆေးသွင်းကုသခြင်းကြောင့် ကိုယ်အလေးချိန်တိုးခြင်း

အချို့ကင်ဆာဆေးများသည် ကိုယ်အလေးချိန်တိုးလာစေနိုင်သည်။ ကင်ဆာဆေးသွင်းပြီး နောက် ကိုယ်အလေးချိန်တိုးလာခြင်းသည် အောက်ပါတို့ အပါအဝင် အကြောင်းအမျိုးမျိုးကြောင့် ဖြစ်နိုင်သည်-

- လှုပ်ရှားမှုနည်းပါးခြင်း။ ကင်ဆာဆေးသွင်းကုသနေချိန်တွင် လေ့ကျင့်ခန်းကို အနည်းငယ်သာ လုပ်လိုကြသည်။
- ပိုမိုစားသုံးခြင်း။ အချို့သောဆေးများက အစာစားချင်စိတ်ကို မြင့်တက်စေသည်။
- အရည်များစုဝေးခြင်း။ ကင်ဆာဆေးသွင်းကုသခြင်းကြောင့် ဖြစ်ပေါ်သော ကိုယ်အလေးချိန်တိုးလာခြင်းအချို့မှာ ခန္ဓာကိုယ်အတွင်း အရည်များစုဝေးခြင်းကြောင့်ဖြစ်သည်။
- အဆီများ များလာခြင်း၊ အချို့သော ကင်ဆာကုထုံးများတွင် စတီးရွိုက်ဆေးများ ပါဝင်တတ်သည်။ စတီးရွိုက်ဆေးများသည် အဆီများစုဝေးခြင်းကို ဖြစ်ပေါ်စေနိုင်သည်။ အချို့သူများတွင် မျက်နှာလုံးဝန်းပြည့်ဖောင်းခြင်း ဖြစ်တတ်သည်။ စတီးရွိုက်ဆေးများ ကြာရှည်စွာသုံးစွဲပါက ထိုဘေးထွက်ဆိုးကျိုးများ အများအားဖြင့် ဖြစ်ပွားပြီး၊ စတီးရွိုက်ဆေးဖြတ်လိုက်ပါက ပျောက်ကင်းသွား ပါလိမ့်မည်။

ကင်ဆာဆေးကြောင့်ဖြစ်သော ကိုယ်အလေးချိန်တက်လာခြင်းအတွက် ဆောင်ရွက်နိုင်သောအရာများ

- ကိုယ်အလေးချိန်များနေခြင်းမဟုတ်လျှင် ပုံမှန်ကိုယ်အလေးချိန်ကို ထိန်းသိမ်းရန် ကြိုးစားပါ။ ကင်ဆာဆေးသွင်းပြီးနောက် ကိုယ်အလေးချိန်တက်လာပါက ဟင်းသီးဟင်းရွက်များ၊ သစ်သီးများ၊ အဆီနည်းသည့် ချိစ် စသည့် အာဟာရပြည့်ဝပြီး ကယ်လိုရီပါဝင်မှုနည်းသည့် အစားအစာများသို့ ပြောင်းလဲရန် ကြိုးစားပါ။
- ခဲထားသည့် အချိုများဖြစ်ကြသော သကြား၊ ပျားရည်နှင့် သကြားလုံး စသည်တို့ကို ရှောင်ကြဉ်ပါ။
- ခံနိုင်ရည်ရှိသလောက် လေ့ကျင့်ခန်းလုပ်ရန်ကြိုးစားပါ။ သင့်ကို ကျန်းမာရေးစောင့်ရှောက်မှုပေးသည့် အဖွဲ့၏ ကြီးကြပ်မှုဖြင့်သာ လေ့ကျင်ခန်းပြုလုပ်ပါ။ လမ်းလျှောက်ခြင်း၊ ရေကူးခြင်း၊ အပေါ့စား အေရိုးဗစ်လှုပ်ရှားမှုတို့သည် ကင်ဆာဆေးကြောင့် တက်လာသော ကိုယ်အလေးချိန်ကို ကျဆင်းစေပြီး သင်၏ အဆုတ်နှင့် သွေးကြောအတွင်း အောက်ဆီဂျင်စီးဆင်းမှုကို မြင့်တက်စေနိုင်သည်။

- သင့်စိတ်ကို အစားအသောက်ဆီမှ အာရုံပြောင်းထားနိုင်မည့် လှုပ်ရှားမှုများတွင် ပါဝင်ဆောင်ရွက်ပါ။

ကင်ဆာဆေးသွင်းကုသခြင်းကြောင့် ကိုယ်အလေးချိန်ကျဆင်းခြင်း

ကိုယ်အလေးချိန်ကျဆင်းခြင်းသည် များသောအားဖြင့် အစားအသောက်နှင့် သက်ဆိုင်သည်။ သို့သော် ကင်ဆာဆေးသွင်းကုသခြင်းကြောင့် ကိုယ်အလေးချိန်ကျဆင်းခြင်းမှာ ကင်ဆာဆေး၏ ဘေးထွက်ဆိုးကျိုးများနှင့် သက်ဆိုင်သည်။ ၄င်းဘေးထွက်ဆိုးကျိုးများက သင်၏စားသောက်နိုင်စွမ်းကို ထိခိုက်စေပြီး သင်၏ ကျန်းမာသည့် ကိုယ်အလေးချိန်ကို ထိန်းသိမ်းထားနိုင်စွမ်း အပေါ်တွင်လည်း ဆိုးကျိုးသက်ရောက်မှုရှိသည်။

ကင်ဆာဆေးသွင်းကုသခြင်းကြောင့် ကိုယ်အလေးချိန်ကျဆင်းခြင်း၏ လက္ခဏာများ

သင့်အနေဖြင့် ဘေးထွက်ဆိုးကျိုးများ ခံစားနေရပါက (သို့) ကိုယ်အလေးချိန်ကျဆင်းနေသည်ဟု ထင်ပါက ပေါင်ချိန်ကြည့်ပါ။ တပတ်အတွင်းတွင် (၅)ပေါင်နှင့်အထက် ကျဆင်းသွားပါက ထိုအကြောင်းကို သင်၏ဆရာဝန် (သို့) ကျန်းမာရေးစောင့်ရှောက်မှုအဖွဲ့ကို ပြောပြပါ။

ကင်ဆာဆေးကြောင့်ဖြစ်သော ကိုယ်အလေးချိန်ကျဆင်းခြင်းအတွက် ဆောင်ရွက်နိုင်သောအရာများ

- ပုံမှန် ကိုယ်အလေးချိန်ကို ထိန်းသိမ်းရန် ကြိုးစားပါ။
- ကိုယ်အလေးချိန်ကျဆင်းခြင်းကို ကုသခြင်းသည် ဖြစ်ပွားနေသော အခြေခံအကြောင်းရင်းများအား ကုသခြင်းအပေါ်တွင် မူတည်သည်။ ကိုယ်အလေးချိန်ကျဆင်းစေသည့် ဘေးထွက်ဆိုးကျိုးများ ခံစားနေရပါက သင်၏ဆရာဝန်နှင့် တိုင်ပင်ဆွေးနွေးပါ။
- အစားအသောက်များထဲတွင် ကယ်လိုရီနှင့် ပရိုတိန်းပါဝင်မှုကို မြှင့်တင်ပါ။

မှတ်ချက်။ ။ သင်၏ ဆေးကုသမှုဆိုင်ရာအခြေအနေများနှင့် ကုထုံးများအကြောင်းကို သင်၏ ကျန်းမာရေးစောင့်ရှောက်မှုဝန်ထမ်းများနှင့် တိုင်ပင်ရန် တိုက်တွန်းပါသည်။

ပင်ပန်းနွမ်းနယ်ခြင်း

ပင်ပန်းနွမ်းနယ်ခြင်းသည် ကင်ဆာဆေးသွင်းကုသသော အမျိုးသမီးများတွင် အခြားအဖြစ်များသော ပြဿနာဖြစ်သည်။ ၄င်းသည် နောင်နှစ်အနည်းငယ်တိုင် ဆက်လက်ဖြစ်ပေါ်နေနိုင်သည်။ ထို့ကြောင့် ထိုအကြောင်းကို သင်၏ဆရာဝန်နှင့် သူနာပြုတို့ကိုအသိပေးရန် အရေးကြီးပြီး ၄င်းတို့က ကူညီနိုင်ပါသည်။ လေ့ကျင့်ခန်းပြုလုပ်ခြင်း၊ ခဏတာအိပ်စက်ခြင်း၊ ဘေးအင်စိုက်ထုတ်မှုချွေတာခြင်းတို့ကို အကြံပြုလိုပါသည်။ သင့်တွင် အိပ်စက်ခြင်းနှင့်ပါတ်သက်၍ ပြဿနာရှိပါက ကုသနိုင်ပါသည်။ အမျိုးသမီးများသည် တခါတရံ စိတ်ဓာတ်ကျဆင်းတတ်သည်။ နှစ်သိမ့်ဆွေးနွေးခြင်း (သို့) ဆေးဝါးများသုံးစွဲခြင်းဖြင့် ကူညီနိုင်ပါသည်။

ကျန်းမာစွာ စားသောက်ခြင်း

သစ်သီးများ၊ ဟင်းသီးဟင်းရွက်များ၊ (ဂျုံ၊ ဆန်လုံးညို၊ ပြောင်းဖူး၊ ဘာလီစေ့ အစရှိသည့်) အစေ့အဆံများသည် ကင်ဆာရောဂါရှင်များအတွက် သင့်လျော်ပါသည်။ သစ်သီးများနှင့် ဟင်းသီးဟင်းရွက်များကို တစ်နေ့လျှင် (၅)ကြိမ်နှင့်အထက် စားသုံးရန် တိုက်တွန်းပါသည်။ အစေ့အဆံများသည် ပြုပြင်မထားသော အစားအစာများဖြစ်ပြီး ၎င်းတို့တွင် ကဆီဓာတ်၊ အမျှင်ဓာတ်၊ ဗီတာမင်၊ သတ္ထုဓာတ်များနှင့် အပင်ထွက်ဓာတုပစ္စည်း များစွာပါဝင်သည်။ အမျှင်ဓာတ်ကို များစွာစားသုံးခြင်းဖြင့် ရင်သားကင်ဆာနှင့် ဟော်မုန်းပေါ်မူတည်သော အခြားကင်ဆာအမျိုးအစားများတွင် ဟော်မုန်း၏လုပ်ဆောင်ချက်များကို ပြောင်းလဲပေးခြင်းဖြင့် ကောင်းကျိုးများ ရရှိနိုင်သည်။ အမျှင်ဓာတ်ကို နေ့စဉ် (၃၀)ဂရမ်ခန့် စားသုံးသင့်သည်။

နို့နှင့် နို့ထွက်ပစ္စည်း (ဥပမာ- ဒိန်ချဉ်)တို့ကို စားသုံးပါ။ အဆီနှင့် သကြားဓာတ်နည်းသော အစားအစာများကို ရွေးချယ်ပါ။ ဥများနှင့် သံလွင်ဆီ စားသုံးပါ။ ထို့အပြင် သကြားဓာတ်များစွာပါဝင်သော အစားအစာများကို ပမာဏနည်းနည်း၊ အကြိမ်ရေနည်းနည်း စားသုံးသင့်သည်။ မပြည့်ဝဆီများနှင့် ယိုများကို ရွေးချယ်ပါ။ အလွန်ငန်သော (သို့) အဆီအလွန်များသော အစားအစာများကို မကြာခဏစားသုံးခြင်းမှ ရှောင်ကြဉ်ပါ။

အပင်မှရသည့် အစားအစာများ

- ဂျုံ၊ ဆန်၊ ပြောင်းဖူး၊ ဘာလီ၊ အာလူး၊ ပေါင်မုန့်၊ ခေါက်ဆွဲနှင့် အခြားသော ကစီဓာတ် ပါဝင်သည့် အစားအစာများ
- ဆလပ်ရွက်၊ ဟင်းနုနွယ်၊ မုန်ညင်းဖြူ
- ပန်းဂေါ်ဖီအစိမ်း၊ ဂေါ်ဖီထုတ်၊ မုန်လာဥ၊ ပန်းဂေါ်ဖီ၊ နို့ကိုဥ၊ မုန်ညင်းစိမ်း
- တရုတ်နံနံ၊ နံနံပင်၊ စမုန်နက်၊ မုန်လာဥနီ
- ကြက်သွန်ဖြူ၊ ကြွက်သွန်နီ၊ ကြက်သွန်နီအလုံးသေး၊ ကြက်သွန်မြိတ်
- ပဲပုတ်၊ စားတော်ပဲ၊ ကုလားပဲ၊ ရွှေပဲသီး၊ မြေပဲ၊ အခြောက်ခံထားသောပဲများ (ပဲလွန်း၊ ပဲတီ၊ ပဲကျား)၊ ပဲအမျိုးမျိုးနှင့် အခွံမာသီးများ
- ခရမ်းသီး၊ ခရမ်းချဉ်သီး
- ရွှေဖရုံသီး၊ ဖရုံသီး၊ သခွားသီး၊ သခွားမွှေး၊ ဖရဲသီး

ကင်ဆာတိုက်ဖျက်နိုင်သည့် အစားအစာ ပင်ရင်းမျာ

- ပဲပင်ပေါက်
- မုန်ညင်း
- ကြက်သွန်ဖြူ၊ လက်ဖက်စိမ်း၊ ပဲပုတ်၊ ဂျင်း၊ ငရုတ်ကောင်း၊ ပိုက်ဆံလျှော်အစေ့၊ ပဲအမျိုးမျိုး
- သစ်သီးနှင့် ဟင်းသီးဟင်းရွက် အများစု (ချဉ်သောအသီးများ၊ ကရဝေးစေ့၊ စမုန်ဖြူ၊ ပရုတ်၊ ဇီယာစေ့၊ ပင်စိမ်း၊ ပူစီနံ)

- ကြွက်သွန်နီ၊ ကြက်သွန်မြိတ်၊ ကြက်သွန်နီအလုံးသေး
- အဝါရောင်ရင့်ရင့်/လိမ္မော်ရောင်/အစိမ်းရောင် သစ်သီးများနှင့် ဟင်းသီးဟင်းရွက်များ

ကင်ဆာဆေးသွင်းကုသစဉ်ကာလအတွင်း ကုသမှုကာလတလျောက် လူနာသည် ပုံမှန်အတိုင်း စားသောက်နိုင်ပါလိမ့်မည်။ သို့မဟုတ် ဘေးထွက်ဆိုးကျိုးများက လူနာ၏စားသောက်မှုပုံစံကို ပြောင်းလဲစေနိုင်သည်။ အစာစားချင်စိတ်နည်းပါးပါက ပမာဏများများ စားသုံးခြင်းထက်စာလျှင် ပမာဏအနည်းငယ်ကို မကြာခဏ စားပေးခြင်းက ပိုကောင်းပါသည်။ လူနာသည် အောက်ပါတို့ကို ကြိုးစားဆောင်ရွက်နိုင်ပါသည်-

- ပမာဏများများကို (၃)ကြိမ်စားမည့်အစား တနေ့လျှင် ပမာဏနည်းနည်းဖြင့် (၅)ကြိမ်မှ (၆)ကြိမ် စားသောက်ခြင်း
- လူနာက ထမင်း၊ ဟင်းများ စားလိုခြင်းမရှိပါက နို့ဖျော်ရည်၊ သစ်သီးဖျော်ရည်၊ ဖျော်ရည် (သို့) စွပ်ပြုတ်များ သောက်သုံးခြင်း
- လူနာမှ ဆောင်ရွက်နိုင်ပါက တစ်စုံတခုကို တက်ကြွစွာပြုလုပ်ပါ။ အဘယ့်ကြောင့်ဆိုသော် လေ့ကျင့်ခန်းလုပ်ခြင်းသည် အစာစားချင်စိတ်ကို မြင့်မားစေနိုင်သည်။ အစာမစားမီ ခရီးတိုလမ်းလျှောက် ပေးပါက အစာစားချင်စိတ် ပိုဖြစ်လာပါလိမ့်မည်

အစာမစားမီနှင့် အစာစားနေစဉ်အတွင်း အရည်များစွာသောက်သုံးခြင်းဖြင့် အစာစားချင်စိတ် လျော့ပါးမသွားစေရန် ဂရုပြုပါ။ ကင်ဆာဆေးသွင်း ကုသစဉ်ကာလအတွင်း အစာစားချင်စိတ် မြင့်မားနေပါက လူနာအနေဖြင့်-

- အဆီနည်းသော အစားအသောက်များကို ရွေးချယ်ပါ
- လတ်ဆတ်သော သစ်သီးနှင့် ဟင်းသီးဟင်းရွက်များကို အမြောက်အမြား စားပါ
- အစားအစာများ၏ သကြားဓာတ်ပါဝင်မှုကို ဂရုပြုပါ
- အလွန်ချိုသော အချိုရည်များကို ရှောင်ကြဉ်ပါ

အဆီစားသုံးမှုဆိုင်ရာ အကြံပြုချက်များ

- အမဲသား၊ သိုးသား၊ ကလီစာများ၊ ချိစ်၊ ထောပတ်၊ ရေခဲမုန့် စသည့် ပြည့်ဝဆီမြောက်မြားစွာပါဝင်သည့် အစားအစာများ စားသုံးမှုကို ကန့်သတ်ပါ။
- ဖုတ်ထားသည့် မုန့်များ (ဥပမာ- ပေါင်မုန့်၊ ကိတ်မုန့်) ၊ မုန့်ခြောက်၊ မာဂျရင်းတို့ ကဲ့သို့သော မပြည့်ဝဆီများ ပါဝင်သည့် အစားအသောက်များ စားသောက်ခြင်းကို လျှော့ချပါ။
- ကြက်၊ ဘဲ၊ ငါး နှင့် ဟင်းသီးဟင်းရွက်မှရသည့် ပရိုတိန်း (ပဲအမျိုးမျိုး) စသည်တို့ကို ပိုမိုစားသုံးပါ။ ငါးကို တစ်ပတ်လျှင် (၃)ကြိမ် ပိုမိုစားသုံးပါက ရင်သားအကြိတ်များ ဖြစ်ပေါ်မှုကို ဟန့်တားနိုင်သည်။

ကျန်းမာသည့်ကိုယ်အလေးချိန်

ကိုယ်အလေးချိန်များခြင်း (သို့) ဝခြင်းတို့ကို ခန္ဓာကိုယ်ထုထည်အညွှန်းကိန်း (BMI) ဖြင့် သတ်မှတ်ပါသည်။ ခန္ဓာကိုယ်ထုထည်အညွှန်းကိန်း (BMI)သည် အရပ်အမြင့်နှင့် ကိုယ်အလေးချိန်တို့အပေါ်တွင် မူတည်၍ တွက်ချက်ပါသည်။ အစားအသောက် ပြုပြင်ပြောင်းလဲခြင်းဖြင့် ကိုယ်အလေးချိန်ကို အရင်လျှော့ချပြီးမှ လေ့ကျင်ခန်းစတင်ပြုလုပ်ရန် အကြံပြုလိုပါသည်။

BMI	အမျိုးအစားခွဲခြားခြင်း
≤ ၁၈.၄၉	ကိုယ်အလေးချိန် နည်းခြင်း
၁၈.၅-၂၄.၉	ပုံမှန် ကိုယ်အလေးချိန်
≥ ၂၅	ကိုယ်အလေးချိန် များခြင်း
≥ ၃၀	ဝခြင်း

အရက်သောက်သုံးခြင်း

ရင်သားကင်ဆာ ဝေဒနာရှင်များအနေဖြင့် အရက်သောက်သုံးခြင်းကို ရှောင်ကြဉ်ရပါမည်။

ပျို့ခြင်းနှင့် အန်ခြင်း

ကင်ဆာဆေးသွင်းကုသနေစဉ်နှင့် ကုသပြီးနောက်တွင် ပျို့ခြင်းနှင့် အန်ခြင်းတို့သည် အချို့သူများအတွက် ပြဿနာတစ်ခုဖြစ်နိုင်ပါသည်။ ပျို့ခြင်းနှင့် အန်ခြင်းတို့အတွက် ဆေးဝါးများသုံးစွဲနိုင်ပါသည်။ ရေ၊ ဆေးလက်ဖက်ရည် စသည့်အရည်များကို များများသောက်ပါ။ တစ်ကြိမ်တည်းဖြင့် ပမာဏများများ သောက်သုံးခြင်းထက် ပမာဏနည်းနည်းကို မကြာခဏသောက်သုံးခြင်းက ပိုကောင်းပါသည်။ ပမာဏနည်းနည်းကို မကြာခဏစားသုံးခြင်း ကလည်း ပျို့ခြင်းကို တိုက်ခိုက်ရန်အတွက် နည်းလမ်းကောင်းဖြစ်သည်။ ပူစီနံ (သို့) ဂျင်းပါဝင်သော ဆေးလက်ဖက်ရည်များကလည်း အစာအိမ်ကို တည်ငြိမ်စေပါသည်။

ပါးစပ်တွင်အနာဖြစ်ခြင်း (သို့) ပါးစပ်ခြောက်ခြင်း

ပါးစပ်တွင်အနာဖြစ်ခြင်း (သို့) ပါးစပ်ခြောက်ခြင်းအတွက်

- စားသောက်ပြီးလျှင် သွားများ (သို့) သွားတုများကို နူးညံ့သောသွားပွတ်တံဖြင့် သန့်ရှင်းပေးပါ။ ကြိုးဖြင့် ညင်သာစွာ သွားကြားထိုးပါ။
- စွပ်ပြုတ်၊ စတူး၊ သစ်သီးဖျော်ရည်နှင့် အချို့ပွဲတို့ကဲ့သို့သော နူးညံ့သည့် (သို့) အရည်သောက် အစားအစာများကို ရွေးချယ်ပါ။
- ပါးစပ်နှင့်သွားဖုံးများကို ရေခဲတုံးများဖြင့် ကပ်ပေးပါ။
- ပါးစပ်ကို သန့်ရှင်းစေရန် သကြားမပါဝင်သော အမြုပ်ထသည့် ဖျော်ရည်များသောက်ပါ။
- သောက်ရာတွင် ပိုက်ကို အသုံးပြုပါ။
- မာသော၊ ငန်သော၊ အလွန်စပ်သော၊ ပူသော အစားအစာများကို ရှောင်ကြဉ်ပါ။

အရသာပြောင်းလဲခြင်းများ

ကင်ဆာဆေးသွင်းကုသစဉ်ကာလအတွင်း သင်၏အရသာခံစားမှုများ ပြောင်းလဲသွားနိုင်ပါသည်။ အစားအစာများ အရသာမရှိခြင်း (သို့) အရသာမတူခြင်းများ ဖြစ်နိုင်ပါသည်။ အရသာပြင်းသော အစားအစာများကို စားသုံးရန် ဆန္ဒရှိနေနိုင်ပါသည်။ ချက်ပြုတ်ရာတွင် ဆေးဖက်ဝင်အရွက်များ၊ ဟင်းခတ်အမွှေးအကြိုင်များ သုံးစွဲခြင်းကလည်း အသုံးဝင်ပါသည်။ သင်အကြိုက်ဆုံး အစားအစာကို ရှာဖွေတွေ့ရှိရန်အတွက် အစားအစာပေါင်းစုံကို စမ်းသပ်စားသုံးကြည့်ပါ။ စားနေကျအစားအစာများကို မစားပဲနေကြည့်ပါ။ ယခင်က မကြိုက်သော အစားအစာများကို ကြိုက်လာကြောင်းလည်း တွေ့ရှိရနိုင်ပါသည်။

အချို့သော ကင်ဆာဆေးများသည် သင်၏ပါးစပ်အတွင်းတွင် သတ္ထုအရသာကို ဖြစ်စေနိုင်သည်။ သတ္ထုအိုးများအစား ပလတ်စတစ်အိုးများ အသုံးပြုခြင်းက သတ္ထုအရသာကို လျော့ကျစေနိုင်သည်။ ဖန်အိုးများ၊ ဖန်ဒယ်အိုးများ အသုံးပြုချက်ပြုတ်ခြင်းကလည်း အသုံးဝင်နိုင်သည်။

ဝမ်းချုပ်ခြင်း

ပုံမှန်ထက်လျော့နည်း၍စားသောက်ခြင်း၊ လှုပ်ရှားမှုနည်းသွားခြင်းနှင့် အချို့သောဆေးများ သောက်သုံးခြင်းတို့အားလုံးသည် ဝမ်းချုပ်ခြင်းကို ဖြစ်စေသည်။ ဝမ်းချုပ်နေပါက အမျှင်ဓာတ်များစွာ ပါဝင်သည့် အစားအစာများစားသုံးခြင်းက ကူညီနိုင်သည်။ ၄င်းတို့တွင် ပေါင်မုန့်၊ ပဲအမျိုးမျိုး၊ ဟင်းသီးဟင်းရွက်များ၊ လတ်ဆတ်သော သစ်သီးများနှင့် သစ်သီးခြောက်များပါဝင်သည်။

အရည်များများသောက်ရမည်။ လမ်းလျှောက်ခြင်းကဲ့သို့ သက်သာသောလေ့ကျင့်ခန်း ပုံမှန်ပြုလုပ်ပါ။ ဝမ်းချုပ်ခြင်း ဆက်လက်ဖြစ်ပေါ်နေပါက သင်၏ဆရာဝန်ထံမှ အကြံဉာဏ်ရယူပါ။

ဝမ်းလျှောခြင်း

တစ်ခါတရံ အချို့ကင်ဆာဆေးများသည် ဝမ်းလျှောခြင်းကို ဖြစ်စေနိုင်သည်။ လိုအပ်ပါက သင်၏ဆရာဝန်မှ ဝမ်းလျှောခြင်းအတွက် ဆေးဝါးများ ပေးပါမည်။ (၂၄) နာရီအချိန်အတွင်း (၄)ကြိမ်နှင့်အထက် ဝမ်းလျှောပါက သင်၏ ကင်ဆာရောဂါကုသမှုအဖွဲ့နှင့် ဆက်သွယ်ပါ။

အခြား

သင်၏အစားအသောက်များထဲတွင် လတ်ဆတ်သောအစားအစာများ ပါဝင်ရန်အရေးကြီးသည်။ သို့သော် ပုံမှန်စွေးမဝယ်နိုင်ပါက ခဲထားသော (သို့) စည်သွပ်ထားသော သစ်သီးနှင့် ဟင်းသီးဟင်းရွက်များတွင် အာဟာရများ ပြည့်ဝစွာ ပါဝင်ပြီး နေ့စဉ်စားသုံးနိုင်ပါသည်။

သင့်တွင် ဆီးချိုကဲ့သို့သော ရောဂါအခြေအနေကြောင့် သတ်မှတ်ထားသော အစားအစာများကိုသာ စားသောက်နေရသည်ဆိုလျှင် ရင်သားကင်ဆာရောဂါ ရှိခြင်းကြောင့် သင်၏ အစားအသောက်ကို ပြောင်းလဲရန် မလိုပါ။ ထပ်မံသိရှိလိုသည်များ ရှိပါက သင်၏ ကင်ဆာအထူးကုအဖွဲ့နှင့် ဆွေးနွေးပါ။

ကိုယ်လက်လှုပ်ရှားခြင်း

ကင်ဆာဆေးသွင်းကုသခြင်းကြောင့် ဖြစ်ပေါ်သော ဘေးထွက်ဆိုးကျိုးများမှာ တစ်ဦးနှင့်တစ်ဦး ကွဲပြားနိုင်ပါသည်။ ဆေးကုသမှုကာလအတွင်းတွင် အလွန်အမင်း ပင်ပန်းနွမ်းနယ်ခြင်းကို ခံစားရနိုင်ပါသည်။ နေထိုင်မကောင်းသော အချိန်များလည်း ရှိနိုင်ပါသည်။ ကိုယ်လက်လှုပ်ရှားမှုတစ်ခုခု ပြုလုပ်နိုင်သည်ဟု ခံစားရသော အချိန်များလည်း ရှိပါလိမ့်မည်။ လမ်းလျှောက်ခြင်းကဲ့သို့သော ညင်သာသည့် လေ့ကျင့်ခန်းမျိုးသည် သင်၏ခွန်အားကို တိုးပွားစေနိုင်ပြီး ပင်ပန်းနွမ်းနယ်မှုများကို လျော့ကျစေနိုင်ပါသည်။

ကင်ဆာဆေးသွင်းကုသနေစဉ်အတွင်း ရေကူးခြင်းကို ရှောင်ကြဉ်ရန် အကြံပြုလိုပါသည်။ အဘယ့်ကြောင့်ဆိုသော် ကူးစက်ရောဂါများကို တိုက်ခိုက်နိုင်သည့် ကိုယ်ခံအားစနစ်၏စွမ်းရည်အပေါ်တွင် ကင်ဆာဆေးသွင်းကုသခြင်းမှ သက်ရောက်မှုရှိနေပါသည်။ ထို့ကြောင့် ရေထဲမှပိုးမွှားများ ကူးစက်ရန် အလားအလာပိုရှိပါသည်။

Appendix G

Logbooks

Logbook for Individual Counseling

Counselor _____

Sr. No.	Date	Duration	Name of Participant

Logbook for Group Meeting

Facilitator _____

Co-facilitator _____

Sr. No.	Date	Duration	Name of Participant

Logbook for Telephone Support

Facilitator _____

Sr. No.	Date	Duration	Name of Participant

မှတ်တမ်းစာအုပ်များ

တစ်ဦးချင်းဆွေးနွေးခြင်း မှတ်တမ်းစာအုပ်

ဆွေးနွေးပေးသူ _____

စဉ်	ရက်စွဲ	ကြာမြင့်ချိန်	ပါဝင်သူအမည်

အဖွဲ့လိုက်ဆွေးနွေးခြင်း မှတ်တမ်းစာအုပ်

ဆွေးနွေးပေးသူ _____

ကူညီဆွေးနွေးပေးသူ _____

စဉ်	ရက်စွဲ	ကြာမြင့်ချိန်	ပါဝင်သူအမည်

တယ်လီဖုန်းဖြင့်ဆွေးနွေးခြင်း မှတ်တမ်းစာအုပ်

ဆွေးနွေးပေးသူ _____

စဉ်	ရက်စွဲ	ကြာမြင့်ချိန်	ပါဝင်သူအမည်

Appendix H

Gantt Chart

	2018					2019						2020		
	Aug	Sept	Oct	Nov	Dec	Jan to Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Proposal Examination														
Submission to Ethic Committee														
Field Preparation and Training														
Data Collection														
Intervention														
Data Analysis														
Thesis Writing														
Submission of Thesis														

Appendix I

Scoring for EORTC QLQ-C30 and QLQ-BR23 Questionnaires

General principles of scoring

The QLQ-C30 is composed of both multi-item scales and single-item measures. These include five functional scales, three symptom scales, a global health status/QOL scale, and six single items. Each of the multi-item scales includes a different set of items - no item occurs in more than one scale.

All of the scales and single-item measures range in score from 0 to 100. A high scale score represents a higher response level.

Thus a **high score for a functional scale** represents a *high / healthy level of functioning*, a **high score for the global health status/QOL** represents a *high QOL*, but a **high score for a symptom scale/item** represents a *high level of symptomatology / problems*.

The principle for scoring these scales is the same in all cases:

1. Estimate the average of the items that contribute to the scale; this is the *raw score*.

2. Use a linear transformation to standardise the raw score, so that scores range from 0 to 100; a higher score represents a higher ("better") level of functioning, or a higher ("worse") level of symptoms.

Technical Summary

In practical terms, if items $I_1, I_2, \ldots I_n$ are included in a scale, the procedure is as follows:

Raw score

Calculate the raw score

$Raw\ Score = RS = (I_1 + I_2 + \ldots + I_n)/n$

Linear transformation

Apply the linear transformation to 0-100 to obtain the score *S*,

Functional scales: $S = \left(1 - \frac{(RS-1)}{range}\right) \times 100$

Symptom scales / items: $S = ((RS - 1)/range) \times 100$

Global health status / QOL: $S = ((RS - 1)/range) \times 100$

Range is the difference between the maximum possible value of *RS* and the minimum possible value. The QLQ-C30 has been designed so that all items in any scale take the same range of values. Therefore, the range of *RS* equals the range of the item values.

Most items are scored 1 to 4, giving *range* = 3. The exceptions are the items contributing to the global health status / QOL, which are 7-point questions with *range* = 6, and the initial yes/no items on the earlier versions of the QLQ-C30 which have *range* = 1.

Scoring the EORTC QLQ-C30 version 3.0

Table 1: Scoring the QLQ-C30 version 3.0

	Scale	Number of Items	Item range*	**Version 3.0** Item numbers	Function scales
Global Health Status/QOL					
Global Health Status/QOL (revised)†	QL2	2	6	29, 30	
Functional scales					
Physical functioning (revised)†	PF2	5	3	1 to 5	F
Role functioning (revised)†	RF2	2	3	6, 7	F
Emotional functioning	EF	4	3	21 to 24	F
Cognitive functioning	CF	2	3	20, 25	F
Social functioning	SF	2	3	26, 27	F
Symptom scales / items					
Fatigue	FA	3	3	10, 12, 18	
Nausea and vomiting	NV	2	3	14, 15	
Pain	PA	2	3	9, 19	
Dyspnoea	DY	1	3	8	
Insomnia	SL	1	3	11	
Appetite loss	AP	1	3	13	
Constipation	CO	1	3	16	
Diarrhoea	DI	1	3	17	
Financial difficulties	FI	1	3	28	

* *Item range* is the difference between the possible maximum and the minimum response to individual items; most items take values from 1 to 4, giving *range* = 3.

† (revised) scales are those that have been changed since version 1.0, and their short names are indicated in this manual by a suffix "2" – for example, PF2.

For all scales, the *RawScore*, *RS*, is the mean of the component items:

$$RawScore = RS = (I_1 + I_2 + \ldots + I_n)/n$$

Then for **Functional scales**:

$$Score = \left(1 - \frac{(RS-1)}{range}\right) \times 100$$

and for **Symptom scales / items** and **Global health status / QOL**:

$$Score = ((RS - 1)/range) \times 100$$

Examples:

Emotional functioning $RawScore = (Q_{21} + Q_{22} + Q_{23} + Q_{24})/4$

EF *Score* = (1 – (*RawScore* – 1)/3)×100

Fatigue $RawScore = (Q_{10} + Q_{13} + Q_{18})/3$

FA *Score* = ((*RawScore* – 1)/3)×100

Breast cancer module: QLQ-BR23

The breast cancer module is meant for use among patients varying in disease stage and treatment modality (i.e. surgery, chemotherapy, radiotherapy and hormonal treatment) (Sprangers *et al.*, 1996). The module comprises 23 questions assessing disease symptoms, side effects of treatment (surgery, chemotherapy, radiotherapy and hormonal treatment), body image, sexual functioning and future perspective (Appendix 2a). The module has been developed according to the guidelines, and approved after formal review. Validation studies in The Netherlands, Spain and the United States have been completed. It has been field tested in a larger cross-cultural study involving 12 countries (EORTC Protocol 15931).

Scoring of the breast cancer module

The breast cancer module incorporates five multi-item scales to assess systemic therapy side effects, arm symptoms, breast symptoms, body image and sexual functioning. In addition, single items assess sexual enjoyment, hair loss and future perspective.

The scoring approach for the QLQ-BR23 is identical in principle to that for the function and symptom scales / single items of the QLQ-C30.†

	Scale	Number of Items	Item range*	QLQ-BR23 Item numbers	†
Functional scales					
Body image	BRBI	4	3	9 – 12	F
Sexual functioning †	BRSEF	2	3	14, 15	†
Sexual enjoyment †	BRSEE	1	3	16	†
Future perspective	BRFU	1	3	13	F
Symptom scales / items					
Systemic therapy side effects	BRST	7	3	1 – 4, 6, 7, 8	
Breast symptoms	BRBS	4	3	20 – 23	
Arm symptoms	BRAS	3	3	17, 18, 19	
Upset by hair loss	BRHL	1	3	5	

* "Item range" is the difference between the possible maximum and the minimum response to individual items.

† Items for the scales marked † are scored positively (i.e. "very much" is best) and therefore use the same algebraic equation as for symptom scales; however, the Body Image scale uses the algebraic equation for functioning scales.

BRSEE, sexual enjoyment, is not applicable if item 15 is “not at all.”
BRHL, upset by hair loss, is not applicable if item 4 is “not at all.”

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