

## Effect of Educative-Supportive Program on Quality of Life in Breast Cancer Survivors\*

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**Abstract:** Breast cancer survivors experience long-term problems related to their disease and treatment, and this can decrease their quality of life. This quasi-experimental research aimed to study the effect of an Educative-Supportive Program on quality of life among 61 breast cancer survivors diagnosed for at least 5 years, at Maharaj Nakorn Chiang Mai hospital, Thailand. Eligible participants were obtained by using purposive sampling and matching of age, education, and year of survival was conducted before group assignment. Participants were assigned into the control and the experimental group, 31 in the control and 30 in the experimental. Implementation of the Educative-Supportive Program was separated into 4-hour sessions, conducted 4 times continuously with 2 weeks interval. Participants' self-report instruments included, Demographic Data Form, Quality of Life: Breast Cancer Version Questionnaire and Self-management Questionnaire. Data were collected 3 times: before the program began (time 1), after the program (time 2) and 3 months after the program ended (time 3). The results showed that mean score of quality of life in the experimental group for all 3 times were 6.43 (SD=1.21), 6.30 (SD=1.18) and 5.86 (SD=1.39), respectively while those in control group were 5.82 (SD=1.22), 5.51 (SD=1.09) and 5.41 (SD=1.14), respectively. By using repeated measure ANOVA, the results indicated no interaction between treatment effect and time effect ( $F$  Wilk's Lamba = .763,  $p$ =.471). Moreover, a significance differences in quality of life mean score between groups ( $F$  = 5.313,  $p$ = .025) and within groups ( $F$  = 6.682,  $p$ = .002) were shown. Using Bonferroni criterions, the results revealed a significance difference of quality of life score between time 1 and time 3 in the experimental group (mean difference = .491,  $p$ =.001). Although the results were not as expected, the evidence of intermediate outcome-self care activities in the experimental group was shown. Further development of Educative-Supportive Programs among Thai breast cancer survivors is still needed, as it is an essential strategy to increase quality of life.

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### Background and Significance

Currently, breast cancer survivors are on the increase. In the United States, the death rate of breast cancer patients has decreased, while the survival rate has increased.<sup>1</sup> Studies conducted during 1974-1976 and 1992-1999 indicate that the survival rate for American breast cancer patients

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increased from 75% to 87%, respectively.<sup>2</sup> In Chiang Mai, northern Thailand, one source of information reported that the survival rate was 57% during 1985-1994<sup>3</sup> while another reported the survival rate as 62.7% during 1983-1992.<sup>4</sup> Breast cancer survival rate is likely to have increased since that time, but current data is unavailable.

Breast cancer survivors who have been diagnosed for more than 5 years experience many problems from time of diagnosis through the years following treatment. They often have difficulty adjusting to life due to their negative perception of disease.<sup>5</sup> In addition, inevitable issues experienced by these survivors affect their quality of life.<sup>6,7</sup>

Quality of life among breast cancer survivors often affects the physical, psychosocial, and spiritual perspectives. Fatigue,<sup>8</sup> insomnia,<sup>9</sup> and early pre-menopause due to hormones or chemotherapy<sup>10</sup> were noted as physical effects. Fear of recurrence<sup>11</sup> and fear of occurring in other female relatives<sup>12</sup> indicated the psychosocial effects. Finally, uncertainty in their illness<sup>13</sup> and maintenance of hope<sup>14</sup> were found to affect them spiritually.

Quality of life is known as both an individual perception and a multidimensional concept. In a study of breast cancer survivors, quality of life included physical, social, spiritual, family, and work.<sup>14</sup> Eleven themes that affect the quality of life emerged in another study including fight, balance, goals, unity, recovery, loss, control, health status, family experience, time, and survival.<sup>15</sup> Moreover, Ferrell, Grant, Funk, Otis-Green, & Garcia<sup>16</sup> found factors that enhance quality of life including factual information from health care providers, health care personnel personality, and their care giving or supporting as well as their understanding of patients. In addition, family, friends, religion, counseling services, and support groups were also reported as factors that enhance quality of life.<sup>16</sup>

The educative supportive nursing system is a type of nursing system in self-care theory.<sup>17</sup> This system is most applicable among those who are able to learn and care for themselves, but, lack of knowledge, support or understanding on how to perform self-care activities is an issue. Nursing strategies used within this system consist of teaching, guiding, supporting, and providing a conducive environment to enhance a person to develop his or her self care ability (self-care agency).<sup>17</sup>

From reviewed literature, some researchers have applied educative supportive nursing system strategies for teaching, guiding, supporting, or providing an environment among cancer patients without using the term "educative supportive nursing system." Results from these studies found that strategies in educative supportive nursing system enhanced positive results that can be implied to quality of life. The positive results including improved information, psychosocial support, and coping skills.<sup>18,19</sup> In addition, it was found that breast cancer survivors who received educative supportive strategies reported positive results including learning to live with new a life perspective, understanding of others sharing the same disease experiences, discovering strategies to live more happily, and renewed perspective for hope and healing.<sup>20,21</sup>

In Thailand, studies on the effect of educative supportive programs on quality of life in long-term breast cancer survivors are limited and there is a gap in the body of knowledge. However there have been a few studies conducted, one study found that an educative supportive program significantly affected quality of life among breast cancer patients receiving chemotherapy,<sup>22</sup> whereas other studies found that an educative supportive program did not show a significant effect on the quality of life in cervical cancer patients receiving radiotherapy<sup>23</sup> nor in leukemia patients receiving

chemotherapy.<sup>24</sup> The limitation of knowledge was found in long-term breast cancer survivors who were diagnosed for more than 5 years or completed treatment. These groups of patients still experience long-term effects from the disease and treatment and the need for promoting their quality of life is required.

Breast cancer survivors are increasing throughout the world. They experience long-term side effects from their treatment, which consequently affects their quality of life. Presently, in Thailand, most studies that were conducted in breast cancer patients who received treatment found inconsistent results. Moreover, limited studies have examined the effectiveness of educative supportive nursing system on quality of life, in particular among survivors who were diagnosed for more than 5 years. This research study aimed to explore the effectiveness of an Educative-Supportive Program on quality of life among breast cancer survivors in Thailand. It was hypothesized that participants who enrolled in an Educative-Supportive Program would illustrate higher quality of life than those who did not enroll in the program at three intervals of data collection: time1 – before the program began (day 1), time 2 – after the program (day 42), and time 3 – 3 months after the program ended.

## Literature Review

In this section, significant factors that affect quality of life in long-term breast cancer survivors, Orem's nursing system and Educative-Supportive Program, as well as the "I Can Cope" program were reviewed.

## Significant Factors that Affect Quality of Life in Long-Term Breast Cancer Survivors

Significant factors that affect quality of life were reviewed including uncertainty in illness, fear of cancer recurrence, hope, sense of control, social support, communication, and relationships between uncertainty in illness, hope, and quality of life. These factors were used to establish content in the Educative-Supportive Program that providing information, guiding skill management, and providing support for readjusting to a positive attitude to enhance quality of life.

Uncertainty in illness is often a result of chronic diseases, complications from treatment, fear of cancer recurrence, effectiveness of treatment, as well as long-term side effects.<sup>25,26</sup> A literature review found that uncertainty in illness was reported at moderate level among long-term breast cancer survivors.<sup>13,14</sup> It was also reported as having a negative relationship with quality of life among Thai breast cancer survivors after treatment for three years or more,<sup>12</sup> and among 103 American breast cancer survivors age 50 years or more.<sup>27</sup> In addition, uncertainty in illness showed a negative relationship with education, physical well-being, psychological well-being, and social well-being.<sup>12</sup> Moreover, uncertainty in illness was perceived after learning of others' cancer diagnosis as reported among 244 long-term breast cancer survivors.<sup>28</sup>

In a related study, fear of recurrence was reported among 244 long-term breast cancer survivors and it was found that Caucasian long-term breast cancer survivors reported fear of cancer recurrence more than African Americans.<sup>28</sup> In addition, after learning their diagnosis and treatment plan, fear of cancer recurrence was reported among these 244 long-term breast cancer survivors.<sup>28</sup>

Hope is a concept within the spiritual dimension of quality of life among breast cancer patients.<sup>29</sup> In a study among 162 middle-income African American breast cancer survivors; hope was found to be a significant predictor of psychological well-being.<sup>30</sup>

Sense of control was found to affect quality of life more in long term breast cancer survivors than in healthy women.<sup>31</sup> Sense of control was also reported as having a relationship with coping strategies in breast cancer patients.<sup>25</sup> Women who had low commitment, low control, high uncertainty and high threat of recurrence used escape-avoidance and accepting responsibility as coping strategies, while women who had high threat of recurrence and high control used seeking social support, planful problem solving, escape-avoidance, positive reappraisal, and self-control as coping strategies.<sup>25</sup>

Social support was reported as having a positive relationship with quality of life in 103 older breast cancer survivors.<sup>27</sup> In comparison, another study found a negative relationship with quality of life in long-term cancer survivors.<sup>32</sup> Women with breast cancer who perceived they had a low level of social support also reported more negative results from cancer and lower quality of life than those who perceived they had a high level of social support.<sup>33</sup> Communication for personal concern and feelings was studied among 990 breast cancer survivors who were diagnosed for at least 5 years or more and found that 45% reported unclear communication for personal concern and feelings with health care providers, while 59% needed more time to communicate with health care providers. In addition, it was found that breast cancer survivors who were 50 years or older and experienced unsatisfied communication with their health care providers tended to have low quality of life.<sup>34</sup>

The relationship between uncertainty in illness, hope, and quality of life was conducted and the study found that uncertainty in illness was negatively correlated with hope<sup>13,35</sup> and quality of life in patients with breast cancer.<sup>35</sup>

In summary, uncertainty in illness, fear of recurrence, hope, sense of control, social support, and communication were reported as significant factors that affect quality of life in breast cancer survivors. These factors were used in the Educative-Supportive Program as intervention in this study, which was expected to increase quality of life.

## **Orem's Nursing System and Educative Supportive Program**

Orem proposed partly compensatory nursing system is where the nurse and patient share responsibility for patient's self-care. This nursing system consists of five methods of helping including, doing for another, guiding another, providing support, enhancing an environment that supports development, and teaching.<sup>17, 36</sup> Furthermore, the *educative supportive nursing system* is for situations when patients can primarily perform or learn to perform their self-care activities with nurses acting as a consultant.

The term "educative supportive" is broadly used in nursing. Orem<sup>17</sup> used this to describe one type of nursing system.<sup>17, 36</sup> Breast cancer survivors who are able to perform self-care but require nursing guidance or support, find Orem's "educative supportive nursing system" appropriate.

The literature review found that the term "educative supportive program" used a variety of terms to describe the support shown to cancer patients. Golant, Altman, & Martin<sup>37</sup> conducted a pilot study to test a "community-based education program" to prevent and manage side effects of cancer and its treatment in 32 patients (47% had

breast cancer). Half-day patient education conference was implemented. The results were assessed the day of the conference and 30 days later and revealed that the program was useful in managing treatment side effects by showing a significant decrease in depressive symptoms and problems with work or activities in daily living. However, a small sample size was noted as a weak point in the study.

Grahn<sup>38</sup> used a grounded theory approach to develop an “education and support program” among 127 newly diagnosed Swedish cancer patients and their families with the aim to promote understanding and coping methods of their disease.<sup>38</sup> The results found that participants reported confidence in using suitable coping strategies for living with cancer.<sup>38</sup> Van der Molen, & Hutchison<sup>39</sup> established, the “Learning to Live with Cancer” program based on the original “I Can Cope” program. This program, which is an 8 weekly two-hour session program, aims to provide information about diagnosis, treatment, side effects of treatment, nutritional problems and supportive therapies. The participants reported that the “Learning to Live with Cancer” program was extremely useful, educational, and enjoyable.<sup>39</sup> Finally, McGrath<sup>40</sup> evaluated an educative supportive program called, “Taking Control” for Australian patients with leukemia. The findings suggested that participants perceived the course as effective in assisting them and their families to cope with their diagnosis.<sup>40</sup>

In Thailand, studies on the effect of “educative supportive programs” on quality of life in long-term breast cancer survivors are limited, however some research studies in breast cancer during treatment were found. One study found that an educative supportive program significantly affected quality of life among breast cancer patients receiving chemotherapy.<sup>22</sup> In this study, the program was designed to provide education and support within 2 days and evaluate patients’ quality of life 4 weeks

after program. In contrast, other studies found that educative supportive programs did not show a significant effect on the quality of life in cervical cancer patients receiving radiotherapy<sup>23</sup> or in leukemia patients receiving chemotherapy.<sup>24</sup> The educative supportive program in cervical cancer patients receiving radiotherapy was designed to provide education 3 times (before received radiation, day 6 during radiation, and 5 days before radiation ended),<sup>23</sup> the educative supportive program in leukemia patients was designed to provide education and support during first 7 days. Then, quality of life was measured 1 month later.<sup>24</sup>

In conclusion, a variety of educative supportive programs have been designed and implemented in many countries. These programs provided educative supportive benefits for participants; however, in Thailand, incongruent results were found. In addition, a limitation in information among long-term breast cancer survivors was shown. These issues need to be further explored.

## The “I Can Cope” Program

In this study, the “I Can Cope” program is conceptualized as an implication of Orem’s educative supportive nursing system because of the methods of activities in “I Can Cope” program including teaching, guiding, supporting, and providing a developmental environment.

The American Cancer Society developed the “I Can Cope” program in 1977 as a supportive environment for adults with cancer and their families or friends. The program aims to help participants cope with their cancer experience by increasing their knowledge, positive attitudes, and skills.<sup>41,42</sup> The original “I Can Cope” program served newly diagnosed patients and their families to overcome their feelings of fear and frustration during the diagnosis phase.<sup>42</sup> It consisted of 3

courses: the classic, compact, and optional courses, which offered reliable cancer information, encouragement by peers, and practical coping skills.<sup>42</sup> The classic course was a 16-hours program, two-hour session, conducted once a week, for eight consecutive weeks. The compact course condensed the time to 8-hours program, two-hour session, conducted once a week, for four consecutive weeks but content was similar to the classic course. The optional course was two-hour session focusing on a single topic including pain or money or nutritional management.<sup>42</sup> Difference of time duration and content provided among the classic, compact and optional courses made these courses suitable for specific situations.<sup>42</sup>

Since its establishment, the original “I Can Cope” program has been used by numerous hospitals and health care systems internationally. It has since been evaluated and revised several times. McMillan, Tittle, and Hill<sup>43</sup> evaluated the original “I Can Cope” program including 219 facilitators, 241 American Cancer Society staff members, and 973 “I Can Cope” participants throughout 49 states. They found that the courses (classic, compact, and optional) ranged from 1-8 classes (mean= 6.44), hours varied from 2-30 per course (mean= 12.3), and 92% participants reported that the course objectives were achieved. Further, participants preferred speakers to use videotape or film to convey information. Finally, less than 20% of participants dropped out during the program.<sup>43</sup> Zuckerman, Preskill, and Levenson<sup>44</sup> also evaluated the original “I Can Cope” program in two regions of the United States and found that participants appeared to be satisfied with the content and delivery of the program and that 83% recommended the program to others.<sup>44</sup>

Reeble<sup>45</sup> revised the original “I Can Cope” program by adding counseling for adult cancer patients and their families and examined the effect

of counseling on the quality of life of individuals with cancer and their family members. The study used three samples including: 1) participants who attended the revised program, 2) participants who attended the revised program and an ongoing support group, and 3) participants that did not attend either the revised program or support group. No statistically significant findings were revealed. In contrast, MacDonald, Lincoln, and Johnson<sup>46</sup> revised the original “I Can Cope” program for more flexibility and greater collaboration throughout all levels of the program. These revisions were shown to be beneficial for various clinical practices.<sup>46</sup>

In summary, from reviewed literature, the original or modified “I Can Cope” program provided benefits for newly diagnosed participants in various cultures. However, in Thailand where inconsistent evidence of the effects of educative supportive program was shown among Thai cancer patients, a modified “I can cope” program based on educative supportive nursing system is a new innovation that is expected to be beneficial for breast cancer survivors in the Thai situation.

## **Conceptual Framework**

Quality of life<sup>29</sup> and educative supportive nursing system<sup>17</sup> were used as the framework for this study. Quality of life consisted of 4 dimensions including physical well-being, psychological well-being, social well-being, and spiritual well-being.<sup>29</sup> Educatve supportive nursing system consisted of nursing activities including teaching, guiding, supporting, and providing an environment for self care.<sup>17</sup> The “I Can Cope” program was conceptualized as an implication of educative supportive nursing system and provided a framework for establishing content and activities in the Educative-Supportive Program, which was used as the intervention in this study.

Breast cancer disease and treatment can diminish the quality of life among long-term breast cancer survivors. Breast cancer survivors who participated in the Educative-Supportive Program, which was established basis on the “I Can Cope” program, were encouraged to perform self-care. Teaching activity provided a knowledge base for self care, guiding activity encouraged optional strategies that are important for self care determination, supporting activity and providing an environment activity promoted sustainability for self care. All these activities in the Educative-Supportive Program encouraged breast cancer survivors to perform self care, which consequently enhances their quality of life. Content that was necessary for influencing self care and quality of life in long-term breast cancer survivor was reviewed and used as a basis for those activities including uncertainty in illness, fear of recurrence, hope, sense of control, social support, and communication.

## **Methodology**

A quasi-experimental design was chosen for this study due to the inability to have full control over extraneous variables and conduct random assignment.

## **Sample**

Sample included female breast cancer patients who were diagnosed for at least 5 years and received follow up treatment at Maharaj Nakorn Chiang Mai hospital, Faculty of Medicine, Chiang Mai University. Purposive sampling was used to recruit the sample. Inclusion criteria consisted of those who had a diagnosis of breast cancer for at least 5 years, no recurrence of disease during data collection, able to read and write Thai, and age over 18 years.

Sample size was calculated using 3 values in the table of power analysis<sup>47</sup> Researcher determined these 3 values as follows: 1) power was .90, 2) significant level at .05 and, 3) effect size was .80. As a result, recommended sample size included 66 participants, with 33 participants in each group.<sup>47</sup> However, data from only 30 participants in the experimental group and 31 in the control group were used for data analysis (attrition rate = 7.57%). Three participants in the experimental group dropped due to the study being inconvenient as a result of workload or travel. Two participants in the control group did not complete the entire questionnaire; therefore, they were not included in the analysis.

Researcher sought eligible patients that met the inclusion criteria daily at the Maharaj Nakorn Chiang Mai hospital, Out Patient Department for approximately 7 months. Approximately 10-15 patients per month were invited to participate in the study until the recommended sample size of 66 was accomplished. Full informed consent was obtained before participation in the study and reaffirmed throughout the study. Of the 66 participants,<sup>33</sup> participants who were willing and able to attend all 4 sessions in the Educative-Supportive Program were assigned to experimental group. Thirty-three participants, who were willing but unable to participate in every 4 sessions due to travel or personal reasons, were assigned to control group. Similar age, education level, and survival time were matched between experimental and control groups. Final data from 30 participants in the experimental group and 31 in the control group were used for data analysis.

## **Intervention: Educative-Supportive Program**

Educative-Supportive Program was developed and modified by the researcher based on a

literature review and “I Can Cope Program” by American Cancer Society.<sup>22</sup> It consisted of a four-hour session, and conducted every two weeks, for four consecutive weeks (day 1, 14, 28, and 42). Each session consisted of 3 main activities: lecture (1.5 hours), videotape and discussion (1 hour), and practicum (1.5 hours).

Nurses, doctors, or breast cancer survivors conducted the lecture of 1.5 hour in length for each session. The topics included living with cancer after treatment (first session), maintaining wellness of mind and body (second session), maintaining healthy relationships (third session), and effectively managing family and daily living (fourth session).

The videotape and discussion, for 1 hour in each session, included uncertainty in illness (first session), hope (second session), fear of cancer recurrence (third session), and sense of control (fourth session). All videotapes were approximately 10 –15 minutes in length.

At the end of each session, a cassette tape entitled, “Stress Reduced: Self-Relaxation” was used during the practicum to teach survivors how to decrease stress. The cassette tape was developed and validated by the Department of Mental Health, Thailand and was 9 – 10 minutes in duration. After that, practice followed the cassette tape and discussion of practice was conducted. Finally, homework was assigned to enhance their knowledge and skills in order to promote self-care activities and increase quality of life.

Based on the Educative Supportive Program, the experimental group received selected planned support and education periodically through out the four sessions. Each session was approximately 4 hours long and included lecture and group participation. Facilitating tools included both video and cassette tapes. Pamphlets and books, where the

content was congruent with lectures and videotapes used during group participation, were also provided at the end of each session. Therefore, participation could practice and review the content later at home. Sessions were conducted on day 1, 14, 28, and 42, respectively. At the end of the fourth session, participants were expected to receive information to help them develop self-care, increase coping skills, and gain positive attitudes. These three goals were thus expected to enhance their quality of life.

### **Routine care**

Both experimental and control group received the same routine care from the hospital. The routine care for long-term breast cancer survivors included meeting the physician at OPD once a year. During waiting for the physician, a video tape consisting of general information for breast cancer patients was provided. Experimental group received routine care with additional intervention: the Educative Supportive Program while control group received only routine care from hospital.

Following completion of the project, provision for Educative Supportive Program was made available for the control group upon request. However, all declined the offer due to time constraints of the program. Therefore, instruments for Educative Supportive Program were mailed to all participants.

### **Instruments**

Instruments in this study included Demographic Data and Health Status Questionnaire, Quality of Life: Breast Cancer Version Questionnaire, and Self -Management Questionnaire.

Demographic Data and Health Status Questionnaire was developed by researcher, which included 9 items: age, length of survival, education

level, ethnicity, religion, marital status, work status, monthly income level, and type of treatment.

Quality of Life: Breast Cancer Version Questionnaire was developed by Ferrell, Grant, and Hassey-Dow,<sup>48</sup> and consisted of 4 dimensions: physical, psychological, social, and spiritual well-being with 8, 22, 9, and 7 items, respectively. Each item was a numeric scale from 0 – 10; 0 = worst, and 10 = best. Reversed score from 31 negative items were completed before sum of score. Possible score ranged from 0 – 460. In order to obtain the same numeric “0-10” scale, researcher divided the sum score by number of items. Therefore, total quality of life was a sum of score from 42 items divided by 42. This strategy was also used with computation of the 4 sub-dimensions of quality of life, which aimed to keep the score from 0-10. A higher score determined a higher level of quality of life. Quality of Life: Breast Cancer Version Questionnaire was translated into Thai by researcher. Cronbach's alpha reliability for overall quality of life (composed from 4 sub-dimensions) was .88 (n= 61) and reliability for sub-dimensions physical, psychological, social, and spiritual well-being was .69, .84, .79, and .37, respectively (n=61).

Self-Management Questionnaire was developed by researcher, which aimed to monitor and evaluate the performance of 55 self-care activities. These activities were derived from the content in the Educative-Supportive Program, including lecture, videotape, and practicum. Using a Likert scale, the items of self-care activities consisted of 4 choices, from 4 = most frequently used, to 1= least frequently used. Panel experts including 3 nurses who each have experience in cancer care found the validity of the Self-Management Questionnaire relevant and appropriate. Cronbach's alpha reliability for the Self-Management Questionnaire was .92 (n=61).

Estimated time to complete all three questionnaires was 30–45 minutes. Participants who were unable to read all or any part of the questionnaire were verbally read questions by the researcher without adding any other information.

## **Human Rights, Data Collection and Data Analysis**

Human Rights Committee and Research Committee of the Faculty of Medicine, Chiang Mai University, approved research proposal. Eligible participants were approached and study's objectives, procedures, and methodology were explained. Informed consent was completed.

Data was collected among 31 participants in the control group and 30 participants in the experimental group. Collection occurred 3 times: before the program began (day 1), after program ended (day 42), and 3 months after program ended in both groups as follows: *Before program began (day 1)*, researcher collected data using Demographic Data and Health Status Questionnaire, Quality of Life: Breast Cancer Version Questionnaire, and Self-Management Questionnaire respectively. *After program ended (day 42)*, quality of life was collected. Three months after program, quality of life and self-care activities were collected again.

## **Results**

### **Sample Characteristics**

Sample included 30 participants in the experimental group and 31 in the control group with mean age of 53.95 years (SD= 5.59) and 52.20 years (SD= 7.37), respectively. Experimental group had a survival time of 8.88 years (SD= 3.98) while control group was 8.51 years (SD= 2.81). The majority of participants in both experimental (53.5%) and control group (66.7%) had minimal

education level of primary school. Majority of experimental group were ethnic Thai (n=28, 93.3%) while all of the control group was ethnic Thai (n=31, 100.0%). The majority of both groups were Buddhist (n=29, 96.7% for both group), married (experimental group n =20, 66.7%; control group n=24, 77.4%), and had monthly family income less than 3,000 Baht (\$ 75.00 US dollars) (experimental group n=9, 30.0%; control group n=14, 45.2%). In addition, experimental group worked full-time (n= 14, 46.7%), while the majority in the control group worked part-time (n=13, 41.9%).

Regarding treatment, participants in both groups had surgery (experimental group n=29, 96.7%; control group n=25, 80.6%), chemotherapy (experimental group n=24, 80.0 %; control group n=18, 58.1%), radiotherapy (experimental group n=8, 26.7%; control group n=12, 38.7%), or

hormone therapy (experimental group n=12, 40.0%; control group n=6, 19.4%).

The difference of means, age and survival time, between experimental and control

group was examined by using t-test statistics. In addition, levels of education, religion, marital status, employment, monthly family income, and types of treatment using chi-square were completed. No statistical difference was found at  $p < .05$ .

## Quality of life

Quality of life was collected 3 times: day1: before program began (t1), day 42: after program ended (t2), and 3 months after program ended (t3). The mean score of quality of life in both experimental and control group found the highest mean score at t1, a slight decrease at t2, and a further decrease at t3 (see Figure1).



The difference of mean quality of life at the 3 times: before program began (t1), after program ended (t2), and 3 months after program ended (t3) in both the experimental and control groups were analyzed using repeated measure ANOVA. The results indicated no interaction between

treatment effect and time effect ( $F$  Wilk's Lambda = .763,  $p=.471$ ). In addition, results showed a significant difference in quality of life both between group (Type effect:  $F = 5.313$ ,  $p= .025$ ) and within group (Time effect:  $F = 6.682$ ,  $p= .002$ ) (see Table 1).

**Table 1** Means of Quality of Life among Experimental and Control Group and Results from Repeated Measure ANOVA

Time	Experimental group (n=30)		Treatment Control group (n=31)	
	Mean	SD	Mean	SD
Before program	6.43	1.21	5.82	1.22
After program	6.30	1.18	5.51	1.09
3 months after program	5.86	1.39	5.41	1.14
Time	F 6.682	p.002*		
Type	F 5.313	p.025*		
Time*Type	F 7.63	p.471		

Further, Bonferroni criterions were used to further examine the significant difference found in quality of life between experimental and control group at 3 times of data collection. The results revealed that the experimental group showed a

significance difference between overall quality of life between before program began (t1) and 3 months after program ended (t3) intervals (mean different .491, p=.001) (**Table 2**).

**Table 2** Difference Means of Quality of Life between experimental and control group at 3 times

time	Before program (mean = 6.131)	After program (mean = 5.910)	3 months after program (mean = 5.640)
Before program			
After program	.221		
3 months after program	.491*	.270	

Bonferroni criterions

\* p < .05

## Self care activities

Self-Management Questionnaire was used to explore any change of self-care activities in both experimental and control group between time 1 (before treatment began) and time 3 (3 months after treatment ended). The results found that participants in experimental group reported a significant increase in 3 activities including; 1) tried to reestablish household activities and employment ( $Z = -2.355$ ,  $p = .019$ ); 2) understand change of daily living following diagnosis of cancer ( $Z = -2.558$ ,  $p = .011$ ); and 3) perform self-relaxation

using cassette tape provided ( $Z = -2.526$ ,  $p = .012$ ). An increase in these activities was likely due to the effect of Educative-Supportive Program on participants in the experimental group thus, leading participants to perform self-care based on the knowledge they received during the program. In contrast, the control group reported an increase in three negative coping skills. These included; 1) expressed guilt if unable to maintain positive attitude toward their diagnosis of cancer ( $Z = -2.352$ ,  $p = .019$ ); 2) performed routine activities of daily living, thus not change in activities needed according to their health state ( $Z = -2.801$ ,  $p =$

.005); and 3) exercise for self-relaxation ( $Z = -2.138$ ,  $p = .033$ ). The control group did not have essential information in understanding their life after diagnosis, thus they lacked knowledge on how to adjust their self-care activities in order to enhance their quality of life.

## Discussion

The results showed that the Educative-Supportive Program did not increase the mean score of quality of life in the experimental group. In addition, this program did not reveal any differences between the experimental and control group after treatment ended. These results did not support the study's expectation.

The results of this study were also congruent with the literature review which found that educational and peer programs would not likely increase the mean score of quality of life in the experimental group over time.<sup>49</sup> In addition, Educative-Supportive Program did not show a statistical significance in quality of life between the experimental and control group among cervical cancer patients receiving radiotherapy<sup>23</sup> and leukemia patients receiving chemotherapy.<sup>24</sup> In contrast, among 80 breast cancer patients, quality of life in terms of satisfaction, was reported significantly higher in the experimental group than in control group, after receiving the educative-supportive program.<sup>22</sup> This was likely due to the sensitivity of the quality of life tool developed by Burckhardt 50 and the specific dependent variable that was used in this particular study.

The results from this study that did not support the study's expectation may be a result of inherent problems due to the complex multidimensional nature of the quality of life concept, the sensitivity of the questionnaire or selection bias of sample.

Quality of life is a complex and multidimensional concept that presents many problems. *Firstly*, although, in this study, the Educative-Supportive Program was designed to focus on managing the most problematic issues among long-term breast cancer survivors including the physical, psychosocial, and spiritual dimension; in the real situation, the majority of physical problems or economical problems was not seen as applicable in the scope of Educative-Supportive Program. *Secondly*, while the validity and reliability of the Quality of Life: Breast Cancer Version Questionnaire was found to be acceptable; the sensitivity of the instrument may not have detected the changing perception of quality of life over time (In a conversation with Karen Hassey-Dow, oral communication, 22<sup>nd</sup> Dec, 2005). *Finally*, because this study recruited only participants who were willing to participate, this recruited sample may have had more problems affecting quality of life than those who refused to join in this study.

The findings of this study may be interpreted with caution, as randomization was not accomplished. Therefore, participants in this study may not have been selected equally, having independent chance of being selected. Therefore, the results may be biased.

## Conclusion

Results from this study indicate that the Educative-Supportive Program failed to increase the overall score of quality of life. This was likely due to the lack of time to perform suitable self-care. However, while the quality of life did not increase, the use of Educative-supportive Program based on Orem's theory showed evidence of an increase in self-care activities. Consequently, these activities may enhance their quality of life.

## Nursing Implication

The results of this study provide several clinical and research implications. *Firstly*, although the final outcome, quality of life, did not show an increase in the experimental group, the Educative-Supportive Program was found to be essential for oncology nurses as a strategy to promote intermediate outcome: self-care activities. *Secondly*, due to the multidimensional concept of quality of life, a variety of problems occurred while conducting the study. Thus, outcome variables should be scoped as more specific than “quality of life” in future studies. *Finally*, more consideration to selected sensitive tool to measure quality of life is suggested.

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## ผลของโปรแกรมการสนับสนุนและให้ความรู้ต่อคุณภาพชีวิตของผู้รอดชีวิตจากการมะเร็งเต้านม

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**บทคัดย่อ:** ผู้รอดชีวิตจากการมะเร็งเต้านมต้องเผชิญกับผลกระทบทางประยุคทางจากโรคมะเร็งและการรักษาซึ่งกระทบต่อคุณภาพชีวิต การวิจัยกึ่งทดลอง (quasi experimental design) ครั้งนี้มีวัตถุประสงค์เพื่อศึกษาผลของโปรแกรมการสนับสนุนและให้ความรู้ต่อคุณภาพชีวิตของผู้รอดชีวิตจากการมะเร็งเต้านมที่ได้รับการวินิจฉัยนาน 5 ปีขึ้นไป จำนวน 61 ราย ที่มารับการรักษาที่โรงพยาบาลรามาธิบดีเชียงใหม่ คณะกรรมการสหกิจศึกษา มหาวิทยาลัยเชียงใหม่ คัดเลือกกลุ่มตัวอย่างตามเกณฑ์ กลุ่มควบคุมและกลุ่มทดลอง ถูกทำให้มีความคล้ายคลึงกันก่อนแบ่งเข้ากลุ่มเป็นกลุ่มควบคุม 31 คน และกลุ่มทดลอง 30 คน โดยวิธีจับคู่ด้วย อายุ ระดับการศึกษา และจำนวนปีที่รอดชีวิต เครื่องมือที่ใช้ดำเนินการวิจัย คือโปรแกรมการสนับสนุนและให้ความรู้ซึ่งถูกจัดกรรท 4 ครั้ง นานครั้งละ 4 ชั่วโมง แต่ละครั้งจัดท่างกัน 2 สัปดาห์ เครื่องมือที่ใช้ในการรวมข้อมูล ได้แก่ แบบสอบถามข้อมูลส่วนบุคคลและข้อมูลทางสุขภาพแบบสอบถามคุณภาพชีวิตในผู้ป่วยมะเร็งเต้านม และแบบสอบถามการจัดการตนเอง แบบสอบถามทั้งหมดจะถูกตอบโดยกลุ่มตัวอย่าง เก็บรวบรวมข้อมูล 3 ครั้ง คือ ก่อนเข้าโปรแกรม สิ้นสุดโปรแกรม และอีก 3 เดือนหลังสิ้นสุดโปรแกรม ผลการวิจัยพบว่ากลุ่มทดลองมีคะแนนเฉลี่ยคุณภาพชีวิตใน 3 ระยะ คือ 6.43 (SD=1.21) 6.30 (SD=1.18) และ 5.86 (SD=1.39) ตามลำดับ ส่วนกลุ่มควบคุมมีคะแนนเฉลี่ยคุณภาพชีวิตแต่ละระยะคือ 5.82 (SD=1.22) 5.51 (SD=1.09) และ 5.41 (SD=1.14) ตามลำดับ ทดสอบความแตกต่างของคะแนนเฉลี่ยคุณภาพชีวิตทั้ง 3 ระยะระหว่างกลุ่มควบคุมและกลุ่มทดลองด้วยสถิติ Repeated measure ANOVA พบว่าไม่มีอิทธิพลร่วมระหว่างชนิดของการทดลองและระยะเวลา (F Wilk's Lamba = .763, p=.471) และยังพบความแตกต่างค่าเฉลี่ยของคุณภาพชีวิตระหว่างกลุ่ม (F = 5.313, p= .025) และภายนอกกลุ่ม (F = 6.682, p= .002) จำนวนนั้นทดสอบความแตกต่างระหว่างคู่ด้วยสถิติ Bonferroni ผลพบว่ามีความแตกต่างอย่างมีนัยสำคัญทางสถิติของคะแนนเฉลี่ยคุณภาพชีวิตระหว่างกลุ่มทดลองและกลุ่มควบคุม แต่พบว่าในกลุ่มทดลองมีการเพิ่มขึ้นของกิจกรรมการดูแลตนเองซึ่งเป็นตัวแปรที่นำไปสู่คุณภาพชีวิต ดังนั้นควรมีการพัฒนาโปรแกรมสนับสนุนและให้ความรู้ในผู้รอดชีวิตจากการมะเร็งเต้านมต่อไปเนื่องจากเป็นกลุ่มที่จำเป็นต่อการเพิ่มคุณภาพชีวิต

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