



The Convenience-Based Pain Management Model with Coaching Strategy on Breast Cancer Patients

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Abstract

Background: *The incidence of breast cancer in Indonesia is the highest among the types of cancer in women with a prevalence of estimated 40-89%. Unresolved pain creates discomfort and adverse effects on physical, psychological, and social that can lead to a decline in the quality of life.*

Objective: *The purpose of this study was to identify the effect of the convenience-based pain management model with coaching strategy in breast cancer patients.*

Methods: *This study used a quasi-experimental design of pre-post test control group. The subjects were chosen by continuous sampling counted 64 respondents (32 intervention group patients and 32 control group patients). Data were collected during pre-test, post-test 1 and post-test 2. All data were collected by nurse coaching and analyzed using ANOVA repeated measure.*

Results: *The results showed that there was a significant effect of comfort-based pain management model with coaching strategy to the decrease of pain rate, improvement of comfort, functional status improvement, status improvement of breast cancer patients symptoms. However, there was no influence on health status nor global quality.*

Conclusion: *The convenience-based pain management model proved to be effective in reducing the degree of pain, increasing comfort, improving functional status and improving the symptom status of breast cancer patients.*

Keywords: *model of pain management, breast cancer, degree of pain, comfort, quality of life.*

Introduction

The highest incidence of cancer in Indonesia, in general, is breast cancer as many as 8,082 cases (18.4%) followed by cervical cancer 4,544 cases (10.3%). The incidence of breast cancer also ranked highest among cancers in women, representing 25% of all cancers in women with a proportion of 240 among 100,000 female inhabitants (Purwanto, Handojo, Haryono &

Harahap, 2015). Breast cancer is the most cancer that is handled in hospitals (Suzanna et al., 2012). The prevalence of breast cancer pain is estimated by the International Association for the Study of Pain (IASP) between 40- 89% (Satija et al., 2014). Unresolved pain creates discomfort and adverse effects both physically, psychologically, and socially in the life of breast cancer patients

affecting the deterioration of the quality of life (Satija et al., 2014; Black et al., 2011).

Fahey et al. (2008) state that there are many types and kinds of actions that become the choice for patients to handle pain. But in fact, more than 50% of cancer patients have unresolved pain (Desen & Japaries, 2011). Apolone et al. (2009) stated that 23.3% of cases of advanced stage cancer management are classified as undertreatment. This fact is supported by Satija et al. (2014) who reported that although breast cancer patients have received adequate breast cancer treatments, some patients still experience severe pain either associated with disease progression or the effects of anti-cancer treatment. The primary focus in solving the problem of cancer pain is to overcome the pain, try to manage it, and not to let the individual become weak because of it (Davidson, Neale & King, 2004). Pain is often used to describe discomfort, and controlled pain is often used as a representative of comfort (Siefert, 2002). The decrease in comfort level occurs due to the increased degree of pain (Findik, Topcu, & Vatansever, 2013). Ifokalani et al. (2007) state coaching is an advantageous strategy to improve the management of cancer pain. Therefore, breast cancer pain is a complex phenomenon that makes intervention of pain management a critical component in nursing and requires management with appropriate strategies. However, until now there has been no pain management model that integrates nursing theory specifically in managing pain by using coaching strategies.

Materials and Method

This research is a quasi-experimental study with pre-post test control group design. This type of the investigation is used to assess the effect of providing comfort-based pain management model to the degree of pain, comfort, and quality of life of breast cancer patients. The model was developed by the researcher so that the overall research consists of 2 stages, namely model development and model validation.

The study sample was breast cancer patients who met the inclusion criteria: female patients with a positive diagnosis of breast cancer complained of pain at least 24 hours with pain scale 4-6 and Karnofsky score of at least 50-60%. Respondents were chosen by continuous sampling as many as 64 respondents were divided into an intervention group (32 respondents), i.e., patients who admitted to Dharmais Cancer Hospital Jakarta in the first two months and two months later as a control group (32 respondents).

Comfort-Based Pain Management Model with Coaching Strategy includes five components in managing breast cancer pain that is coaching strategy, physical comfort, psychospiritual support, socio-cultural comfort, and environmental comfort. This model includes tools such as patient guidance on comfort-based pain management, nursing training module as model reference guide, nurse coaching log book, support based pain assessment format, skill training monitoring sheet, pain follow-up sheet, and diary notes

Questionnaire Brief Pain Inventory (BPI) to measure the degree of pain, General Comfort Questionnaire (GCQ) to measure comfort, and Questionnaire quality of life of breast cancer patients using the European Organization for Research and Treatment of Cancer Core Quality of Life Questionnaire (EORTC QLQ -C30) and EORTC Breast cancer-specific quality of life questionnaire (EORTC QLQ-BR23).

Equality test of respondent characteristic between intervention group and control group were analyzed by chi-square for categorical data and independent t-test for numerical data. Multivariate analysis was performed using ANOVA repeated measure.

Results

The result of the research showed that the characteristic of the sample between the intervention group and the control group did not differ significantly, as shown in the following table:

Table 1. Respondents 'Characteristics on Intervention Group and Control (n = 64)

Variabels	Intervention Group		Control Group		p-value *)
	n	%	n	%	
1. Marital status:					
a. Married	27	84.4	27	84.4	1.000
b. Unmarried	2	6.3	2	6.3	
c. Widows	3	9.4	3	9.4	
2. Education:					
a. Junior High	13	40.6	11	34.4	0.480
b. Senior High	16	50.0	13	40.6	
c. Associate degree	1	3.1	2	6.3	
d. Degree	2	6.3	6	18.8	
3. Jobs					
a. Government employees	2	6.3	3	9.4	0.873
b. Entrepreneur	2	6.3	2	6.3	
c. Retired	0	0.0	1	3.1	
d. Unemployed	28	87.5	26	81.3	
4. Stadium of cancer:					
a. I	0	0.0	1	3.1	0.924
b. II	7	21.9	8	25.0	
c. III	22	68.8	20	62.5	
d. IV	3	9.4	3	9.4	
5. Attitude toward pain:					
a. positive	30	93.8	28	87.5	0.672
b. negative	2	6.3	4	12.5	
6. Emotion:					
a. Happy	10	31.3	10	31.3	1.000
b. Angry	2	6.3	2	6.3	
c. Sad	13	40.6	12	37.5	
d. Afraid	7	21.9	8	25.0	
7. Family support					
a. Supporting	32	100	32	100	
b. Not supporting	0	0.0	0	0.0	
8. Financial condition					
a. Good	4	12.5	2	6.3	0.077
b. Average	16	50.0	25	78.1	
c. Less	12	37.5	5	15.6	
9. Experience with cancer:					
a. Yes	15	46.9	14	43.8	1.000
b. No	17	53.1	18	56.3	
10. Ages	44.72	9.60	48.59	7.03	0.070
11. Initial pain rate	4.80	1.84	5.30	1.76	0.269

*) independent t-test

Table 2. Characteristic Types of Pain Medication Used by Respondents In Group Intervention and Control Group (n = 64)

Groups		Pain Medication									p*
		Asam- mefena- mat 500mg	Ketoro- lac 30 mg	Parace-tamol 500 mg	Mor- fin 20mg	MST 20 mg	Trama - dol 300mg	Ultra -cet 30mg	Gabe- xal 300 mg	Code- in 30mg	
Intervention	n	3	12	10	2	2	1	1	1	0	0.949
	%	9.4	37.5	31.3	6.3	6.3	3.1	3.1	3.1	0.0	
Control	n	3	12	8	1	3	1	3	0	1	
	%	9.4	37.5	25.0	3.1	9.4	3.1	9.4	0.0	3.1	

chi-square

Table 3. Degree of Breast Cancer Pain Before and After Implementation of Management Model in Intervention and Control Group (n = 64)

Pain rate	Intervention group (n=32)		Control group (n=32)		F	Nilai p
	Mean	SD	Mean	SD		
Pre-test	4.80	1.84	5.30	1.76	28,949	0.0001
Post-test 1 (day-4)	3.25	1.59	5.87	1.40		
Post-test 2 (day-7)	1.71	1.15	3.64	1.89		

Table 3 shows a significant difference in mean degree of pain between the intervention group and the control group at $p < 0.0001$ ($p < 0.05$). This

difference is obtained in all measurements, as in Table 4 below.

Tabel 4. Paired wise Comparison on degree of pain

Pain rate of breast cancer	Mean difference	p
Pre-test vs post-test 1	0.48 (0.20 - 0.77)	0.001
Pre-test vs post-test 2	2.37 (1.97 - 2.77)	0.0001
Post-test 1 vs post-test 2	1.88 (1.55 - 2.22)	0.0001

Tabel 5. Comfort of Breast Patients Before and After Implementation of Coaching Model on Intervention and Control Group (n = 64)

Comfort	Intervention (n=32)		Control (n=32)		F	p
	Mean	SD	Mean	SD		
Pre-test	2.39	0.21	2.32	0.35	4.474	0.039
Post-test 1 (day 4)	2.51	0.10	2.62	0.29		
Post-test 2 (day 7)	2.98	0.25	2.71	0.36		

Table 5 shows the average gradations of increased comfort from pre-test to post-test 2 in the intervention group as well as in the control group.

However, analyzed differences between the mean of inter-group convenience showed a significant difference of 0.039 ($p < 0.05$).

Table 6. Status of Breast Cancer Patients Symptoms Before and After Implementation Coaching Model on Intervention and Control Groups (n = 64)

Symptoms	Intervention (n=32)		Control (n=32)		F	p
	Mean	SD	Mean	SD		
Pre-test	65.67	17.88	66.57	22.95	35.033	0.0001
Post-test 1 (day-4)	21.45	10.25	31.54	19.38		
Post-test 2 (day-7)	15.77	8.40	31.94	18.65		

The result of post-hoc paired wise comparison test was obtained a comparison of pre-test vs. post-test 1 and pre-test vs. post-test two between groups ($p < 0.0001$), post-test one vs. post-test 2 ($p = 0.004$). Table 6 shows a significant difference in mean symptom status values ($p < 0.0001$) in all

measurements between the two groups ($p < 0.05$). The results of this analysis indicate the average score decreased which means the status of the symptoms the better.

Table 7. Functional Status of Breast Cancer Patients Before and After Implementation of Coaching Model in Intervention and Control Group (n = 64)

Functional staus	Intervention (n=32)		Control (n=32)		F	p
	Mean	SD	Mean	SD		
Pre-test	41.60	16.92	39.57	18.40	5.107	0.028
Post-test 1 (day-4)	61.25	14.55	58.34	14.95		
Post-test 2 (day-7)	65.86	16.06	61.04	16.60		

The result of post-hoc paired wise comparison test is the comparison of pre-test vs. post-test 1 and pre-test vs post-test 2 between groups ($p < 0.0001$), post-test 1 vs post-test 2 ($p = 0.001$) Based on Table 7 shows the mean value of functional status improvement from pre-test to post-test 2 in the intervention group as well as in

the control group. However, analyzed the mean difference of practical values between groups showed a significant difference of 0.028 ($p < 0.05$) and differences were obtained in all measurements (The result of post-hoc paired wise comparison test p-value less than 0.05).

Table 8 Global Health Status of Breast Cancer Patients Before and After Model Implementation (n = 64)

Global health status	Intervention (n=32)		Control (n=32)		F	p
	Mean	SD	Mean	SD		
Pre-test	45.48	26.22	53.47	25.93	0.046	0.831
Post-test 1 (day-4)	57.63	24.67	50.37	24.27		
Post-test 2 (day-7)	61.11	26.77	47.56	24.15		

Based on Table 8 it can be seen that the model does not affect global health status (p: 0.831).

Table 9 Quality of Global Living of Breast Cancer Patients Before and After Model Implementation in Intervention and Control Groups (n = 64)

Quality of life	Intervention (n=32)		Control (n=32)		F	p
	Mean	SD	Mean	SD		
Pre-test	52.77	26.77	57.98	21.06	3.002	0.089
Post-test 1 (day-4)	66.66	19.75	58.33	20.93		
Post-test 2 (day-7)	85.06	13.41	55.20	21.76		

Table 9 shows that the comfort-based pain management model has not affected the quality of life globally (p = 0.089). Nevertheless, in the intervention group, the mean value of overall quality of life improved.

Discussion

The degree of pain in the intervention group decreased significantly compared with the control group. The results of this study differ from the results of research conducted by Kravitz et al. (2011) which states that the degree of pain is not significantly decreased. This is because the focus of his research is more on emphasizing improving self-efficacy communication about the extent of cancer pain, and correcting precisely the misconception about cancer pain.

The convenience-based pain management model provides solutions to communication problems and misconceptions of this pain through socio-cultural comfort interventions. Patients facilitated by nurse coaching perform supportive therapy group pain. Supportive therapy of this group of pain can be classified as supportive-expressive group therapy (Moorey & Greer, 2006).

Wool & Vincent Mor (2005) stated that the synergistic interaction between the biopsychosocial dimensions is an important area in considering the approach of managing cancer pain. The same statement was found by Witjaksono (2012) said that the handling of pain attacks not only focused on the physical alone but also includes psychological, social, cultural, and

spiritual. Rana et al. (2011) also suggest effective cancer pain management requires a holistic approach and consists not only of the physical component but also the psychosocial and mental components with excellent communication.

Comfort-based pain management with coaching strategies, placing nurse-patient relationships as partners and committed together to achieve the maximum degree of pain reduction. This is especially important because Hovind, Bredal, and Dihle (2012) stated that due to the short time when hospitalized, post-operative breast cancer patients received no explanation and little help about the management of the pain that would likely reappear.

The application of the comfort-based pain management model to the coaching strategy showed that within one week of pain management at the hospital, the degree of pain decreased significantly to the mildest level of pain with a scale of 0.81; worst pain 2.28; and mean of degree of pain 1.71. These results are still more useful than controls and other research findings. The results of their study mentioned the mildest pain of 1.9; worst pain 6.7; and a mean of 4.1 degrees. In general, the results of this model of pain management research can be an answer solution from some literature that mentions the inadequate management of cancer pain (Apolone et al., 2009 Foley, 2011) or has not been handled thoroughly (Desen&Japaries, 2011).

The results of this study also found the relationship between the degree of pain and comfort in the intervention group, namely a decrease in the average level of pain than the mean value of increased support. The opposite results are shown by the results of the research of Findik, Topcu, and Vatansever (2013), namely the common pain of $4.67 + 2.93$, the mean comfort value of $2.75 + 0.29$ in patients after undergoing surgical procedures and drain installed. These results prove that happiness decreases as a consequence of an increased degree of pain. From the results of two studies, it can be concluded that between pain and comfort are two opposite things (binary opposites). This is in line with the results of research Schuiling (2003) states there is a correlation with the direction of the negative relationship between comfort and pain during women giving birth, the assessment of pain score increased, and vice versa comfort score decreased. Furthermore, the results of Rief et al. (2011) note that after four years of breast cancer survivors reported a significant increase in pain. The emergence or an increase in pain symptoms in women with breast cancer survivors is associated with the type of surgery and the use of tamoxifen as well as psychological factors. Of the status of existing symptoms in breast cancer patients, the pain management model proved to help improve the situation of symptoms seen from the decrease in the score.

Previous studies have suggested that women with breast cancer also report difficulties with sexual function and sexual pleasure after primary treatment of breast cancer (Fobair et al., 2006). Furthermore, Mols et al. (2005) concluded that although women with breast cancer report a high quality of life, one problem that can arise is the difficulty with sexual function. The results of the study of the influence of comfort-based pain management model showed the mean value of sexual function increased from pre-test (73,95), post-test 1 (73,43), and post-test 2 (80,20). However, the extent to which sexual intercourse was enjoyable (sexual pleasure) decreased over

the past four weeks, the mean pre-test (68,75), post-test 1 (36,45), and post-test 2 (41,66). This can happen because the patient in the last week is still undergoing hospital treatment.

Increased functional status leads to a more positive perception of patients on their global health status, which encourages the achievement of an optimal global quality of life. However, the results of this study show no effect of comfort-based pain management model on global health status and overall quality of life in breast cancer patients. This result can be made possible by the time of measuring the health status/quality of life is too short for only three days within a week, so the change in health status/quality of life has not been so felt by the patient.

The effect of the actual model showed that the mean of health status and quality of life improved during the measurement from pre-test to post-test 2 in the intervention group, but the improvement did not show significant difference compared to the control group.

Conclusion

The comfort-based pain management model has a sufficient effect in reducing the degree of pain, improving comfort, improving functional status and improving the symptom status of breast cancer patients.

Comfort-based pain management model with coaching strategy along with supporting tools can be integrated into nursing care in breast cancer patients. This model made the nursing care of breast cancer patients with pain more focused and structured on pain management efforts comprehensively.

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