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Original research article

The Effects of a Peaceful End- of-Life-Care Program on Peaceful Death as Perceived by End-Stage Cancer Patients Receiving Chemotherapy

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ABSTRACT

The purpose of this study was to examine the effects of a peaceful end-of-life care program on peaceful death as perceived by end-stage cancer patients receiving chemotherapy. There were 59 cancer patients who completed the study, 30 in the control group and 29 in the intervention group. The control group received usual care. The intervention group received the 4-week peaceful end-of-life care program which was developed based on the Theory of the Peaceful End of Life. The program activities included: 1) establishing relationships, 2) assessing symptoms and symptom management, 3) communication for reducing anxiety, 4) encouraging the patients to make their advance care planning and advising them to select a place for death, and 5) helping them to achieve their last wishes. The patients' loved ones were invited to be involved throughout the program. Peaceful death was measured at baseline, at the program completion, and at a one month follow up. Descriptive statistics and repeated measures ANOVA were used to analyze data.

The results showed that at the program completion and at one month follow up, the mean scores of peaceful death as perceived by cancer patients in the intervention group were significantly higher than the control group ($p<.001$). In the intervention group, at the program completion and at one month follow up, the mean scores of peaceful death were higher than that at baseline ($p<.001$). However, the mean scores of peaceful death at the program completion and at one month follow up were not different ($p>.05$).

The findings of this study show promise for the peaceful end-of-life care program in reducing suffering and promoting peaceful death as perceived by end-stage cancer patients

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receiving chemotherapy. Health care providers working in this area could implement the program to enhance end-of-life care among end-stage cancer patients.

Keywords: Peaceful death; Peaceful end-of-life care program; End-stage cancer patients receiving chemotherapy

1. Introduction

Cancer is the second leading cause of death globally, 9.6 million deaths from cancer were reported in 2018 [1]. The number of cancer survivors is expected to increase to 20.3 million by 2026 [2]. for the number of new cancer patients around the world in 2015 was up to 15.2 million [3]. In Thailand, in 2015 the number of new cancer patients increased by up to 13.55 percent from 2013 [4]. In 2016 the rate of deaths for cancer patients was 119.3 cases per 100,000 [4]. The term end-stage cancer patients refers to patients who have been diagnosed with cancer, and the disease has spread to various organs, and the cancer cannot be cured [5]. Regarding new cases and death rate, the number of end-stage cancer patients are increasing dramatically. These patients have both physical and mental suffering due to symptoms of the ongoing cancer and side effects from treatment, such as chemotherapy [6]. These symptoms include pain, nausea - vomiting, loss of appetite, fatigue, breathlessness, anxiety, depression, and so on. These symptoms not only affect the patients, but can also affect family members or close friends.

King Chulalongkorn Memorial Hospital is a tertiary hospital in Bangkok, Thailand. From 2014-2016, the number of admissions of cancer patients receiving chemotherapy and radiation at King Chulalongkorn Memorial Hospital increased continuously, 2170, 2475, and 3472 times/year [7]. Although chemotherapy is a standard conventional treatment that is available for all stages of cancer [8], its side effects result in suffering various unpleasant symptoms [8]. In end stage cancer patients, chemotherapy is often used as adjuvant treatment to reduce tumor size and to prevent metastatic cancer. Palliative care is considered as care to alleviate suffering from symptoms caused by illness and treatments. The goal of palliative care is to improve quality of life for the patients and their families. However, general palliative care may not be sufficient for end-stage cancer patients who may not have more than 6 months to live.

The Theory of the Peaceful End of Life is a middle range nursing theory which was developed by Ruland and Moore [10]. Based on this theory, in order to promote a peaceful end of life, the patients must be cared for in a manner that satisfies these criteria: "1) Not being in pain, 2) Experience of comfort, 3) Experience of dignity/ respect, 4) Being at peace, and 5) Closeness to significant others/persons who care" [10]. In addition, helping the patients achieve their last wishes was emphasized [11]. This theory was developed to reduce suffering and promote a peaceful experience for end of life patients and to help them to achieve their last wishes.

Thus, a peaceful end of life care program was developed based on the Theory of the Peaceful End of Life. The care activities start with establishing good rapport with the patients and their family members. Then, symptoms were assessed and managed by collaborating with an oncologist. Effective communication in end of life care was included, along with maintaining dignity and respect. Each patient was encouraged to make his/her advanced care planning and identify a preferred place to stay for their dying phase. The patients' last wishes were assessed through the patients themselves and their family members. Facilitating each patient to achieve his/her last wishes was continued. Evidence based practice was integrated in each care activity. The patients' significant others were invited to be involved in care throughout the program.

Based on the literature review, palliative care programs were developed in order to promote a good quality of life for end-stage cancer patients by alleviating suffering and reducing anxiety. The perception of death is different for all individuals, and is shaped according to previous experiences, gender [12], and age [13]. However, the perceived peaceful death among end-stage cancer patients undergoing chemotherapy receiving a peaceful end-of-life care program had not been documented.

Thus, the purpose of this study was to test the effects of a peaceful end-of-life care program on peaceful death as perceived by cancer patients receiving chemotherapy.

2. Materials and Methods

2.1 Conceptual framework

The Theory of the *Peaceful End of Life* by Ruland and Moore was used as a framework to develop a 4-week peaceful end of life care program to promote peaceful death as perceived by cancer patients receiving chemotherapy. The theory of Peaceful End of Life describes that, in order to promote peaceful death, a person must be taken care of in a way that meets 5 criteria: 1) free of pain, 2) experience of comfort, 3) experience of dignity, 4) being at peace, and 5) closeness to significant others. The program was provided for each participant individually one time/week for a total of 3 times, 30-45 minutes each. After the patient was discharged, follow-up phone calls were conducted with each patient one time /week for 4 weeks.

In this program, care activities consisted of establishing a relationship with the patients and their family members. Symptoms were assessed and managed to ensure that the person was not in pain and that he/she experienced comfort. Effective communication in end of life care was used throughout the program along with maintaining one's dignity and respect. Each patient was advised to make his/her advanced care planning and identify a preferred place for his/her dying period. This information was communicated to the patient's family members. The patients' last wishes were assessed and they were facilitated in achieving these last wishes. The patients' significant others were invited to be involved in care throughout the program.

2.2 Research Objectives

2.2.1 To examine the change in perception of a peaceful death held by end stage cancer patients who participated in the intervention group, and those in the control group at baseline, program completion, and 1-month follow-up.

2.2.2 To test group difference in mean scores of peaceful death and its components as perceived by end stage cancer patients who participated in the intervention group and those in the control group at baseline, the program completion, and 1-month follow-up.

2.2.3 To observe any change in mean scores of peaceful death as perceived by end stage cancer patients who participated in the intervention group at program completion, and at 1-month follow-up when compared to baseline.

2.3 Research methodology

This is a quasi-experimental study, a two-group, pre-test/post-test design with an aim to examine the effects of a peaceful end-of-life care program on peaceful death as perceived by end-stage cancer patients receiving chemotherapy as a palliative treatment in the oncology medical ward, King Chulalongkorn Memorial Hospital, Thailand. Data were collected from July 2018 to January 2019.

Perceived peaceful death was measured at baseline, right after the program completion, and at one month after program completion. During the time of conducting the study, there was no palliative care team serviced in this ward.

2.4 Sample

The sample was end stage cancer patients who were admitted to the medical oncology ward, King Chulalongkorn Memorial Hospital. The sample was determined by using Cohen's table with significance level .05, test power .80, and effect size .80 [14]. A minimum sample of 26 per each group or a total of 52 participants was needed. Moreover, in order to prevent loss/dropout during the experimental period, 20 percent of the sample was added [15]. Thus, 60 end-stage cancer patients receiving chemotherapy for palliative care were recruited. Age, gender, and type of cancer were used for matching and assigning the participants into the control group and the intervention group. The first 30 end-stage cancer patients who met the inclusion criteria were assigned into the control group. The inclusion criteria were: 1) age 18 years or older, 2) diagnosed with end-stage cancer, 3) PPS (Palliative Performance Scale) 40-70, 4) receiving chemotherapy or chemotherapy with radiation therapy as supportive care, and 5) having a loved one or significant person available to be involved throughout the program. The control group received usual care including symptom assessment, symptom management, and related information was given when a patient asked. After the control group was filled, the second 30 end-stage cancer patients were assigned to the intervention group based on the same inclusion criteria. The intervention group received usual care as well as the peaceful end-of-life care program. After data collection in the control group was completed, the researcher started to conduct the intervention group. There were 30 end-stage cancer patients who completed the intervention, however one of them had died before the last 1-month follow-up measurement was performed. Thus, data were collected among only 59 end-stage cancer patients.

2.5 Instruments

Instruments used in this study are described as followed:

1) The Palliative Performance Scale (PPS), a tool used worldwide, for determining patient survival prognostication in palliative care. The PPS comprises of 5 domains: ambulation, activity and evidence of disease, self-care, intake, and level of consciousness. Its scores range from 0% to 100%, with a score of 0% indicating death, and 100% indicating that the patient is able to perform normal activity [16].

2) Demographic data and medical history. Demographic data collected in this study included gender, age, religion, marital status, education, occupation, income, sources of social support, a significant person, and last wishes. Medical history collected in this study included diagnosis, type and stage of cancer, cancer treatment, and comorbid conditions.

3) The Peaceful Death Scale (PDS) was used to measure peaceful death as perceived by the participants. The PDS was developed by Maneeratsayakorn [17] via literature review and was modified to be suitable within a Thai context. The PDS has 30 items used to assess 5 components of perceived peaceful death (physical aspect, psychological aspect, social aspect, spiritual aspect, and place and environmental features for dying). It is a

five-point scale on which 1 = strong disagree to 5 = strongly agree). Possible scores range from 30-150, with higher scores indicating a better quality peaceful death as perceived by the end-stage cancer patient. The content validity was tested by 5 experts, the I-CVI yielded 0.88 [16]. The PDS has high internal consistency reliability (Cronbach-alpha = 0.97).

All measurements were performed by the research assistant, a registered nurse with 4 years of experience who trained as a clinical research assistant at King Chulalongkorn Memorial Hospital, Thailand. The measurements were conducted at baseline, right after program completion, and at one month after program completion.

2.6 Intervention

The 4-week peaceful end of life care program was provided by the researcher, a nurse with 5 years of experience and an oncological ward nurse at the King Chulalongkorn Memorial Hospital. She had completed the 10-day training course of nursing care for cancer patients receiving chemotherapy, a training course of palliative care for nurses, and a training course on communication in end of life care. Each meeting lasted 45-60 minutes. Before each meeting, the medical record was reviewed, especially symptoms, symptom management, and other current problems. The loved one or significant person was invited to be involved in care throughout the program. The program content foreach week is briefly described below:

Week 1. A relationship was established with the patient and his/ her family members. An overview and rationale of the intervention was described. Symptoms and the patient' s need were assessed. Symptoms were managed by collaborating with an oncologist. Experiences of comfort were promoted. Communication in end of life care was used to explore the patient's point of view regarding his/her meaning of life.

Week 2. The medical record was reviewed, especially symptoms and symptom management, carried out since the first meeting. An experience of dignity/ respect was promoted by encouraging the patient to perform decision making by their self based on adequate information. Each patient was advised to make his/her advanced care planning and identify a preferred place to stay during his/her dying period. This information was communicated with the patient' s family members and loved ones. The patient's sense of being at peace was assessed and promoted based on one' s needs, beliefs, and faith. The patient' s last wishes were assessed.

Week 3. The medical record was reviewed, especially symptoms and symptom management since the first meeting. Previous problems were re-assessed and managed. In the case of a problem involving family members, a family meeting was conducted. Care regarding helping the patient to achieve his/her last wishes were provided.

Week 4. The medical record was reviewed, especially symptoms and symptom management since the first meeting. Continuing problems were re-assessed and managed. Care regarding the helping of the patient to achieve last wishes was continued.

2.7 Ethical

The approval for the use of human subjects was received through the Ethical Review Sub-Committee Broad for Human Research Involving Sciences, Thammasat University, EC approval number: 035/2561 and through the IRB committee of King Chulalongkorn Memorial Hospital, EC approval number: 283/61. In approaching potential participants, the objectives of the study, its risks and benefits, issues related to confidentiality, and informed consent procedures were described. The potential participants were informed that they had the right to withdraw from the study at any time without prior notice. In addition, refusal to participate in the study or withdrawal from the study would not at all affect their receipt of proper care or treatment. After the patients agreed to participate in the study, they were asked to complete a consent form before conducting the baseline measurement.

During the 4-week program, the patients and their family members were informed that if they had any question regarding the peaceful end of life care program, they could contact the researcher any time.

2.8 Data collection method

Data collection was conducted from July 2018 to January 2019. In recruiting participants, the nurses at the oncological ward, King Chulalongkorn Memorial Hospital, were asked to screen the patients and ask the patients permission of the researcher to meet with them. After contacting potential participants and ensuring that they met the inclusion criteria, the researcher and each participant scheduled an appointment at an agreed date and time for the baseline measurement and to plan for the whole of the study. The researcher started collecting data in the control group for the first 30 patients. After data collection in the control group was completed, the experimental group was started.

2.9 Statistical analysis

Descriptive statistics, t-test, and repeated measures ANOVA were used to analyze data. A *one-tailed* test, $p<.05$ was set as statistically significant. Statistical assumptions were tested before performing data analysis. The *Mauchly's test of sphericity* indicated that the assumption of sphericity had not been violated.

3. Results

There were 59 participants who completed the study, 29 in the intervention group and 30 in the control group. The majority of the control group and the intervention group was male, Buddhist (100% vs. 93.3%), married (66.7% vs. 80%), and reported family as their main source of social support (90% vs. 90%). Participants in the intervention group were older on average (M = 59.93 vs. 58.93 years). More than haft of the participants in both groups were diagnosed with colon cancer (56.7% vs. 56.7%).

More than half of the participants in the control group had stage 5 cancer (53.3%), whereas more than half of the participants in the intervention group had stage 4 cancer (56.7%).

The change of peaceful death as perceived by end stage cancer patients who participated in the intervention group and those in the control group, measured at three time points were tested using One-way repeated measure ANOVA. The results showed that the mean scores of peaceful death as perceived by end-stage cancer patients receiving chemotherapy between groups at baseline, right after program completion, and at one month after program completion were significantly different ($F = 11.530$, $df = 1$, $p<.001$) as shown in Table 1.

In the intervention group, when testing the difference in pairs by using Bonferroni's method, it was found that the mean score of peaceful death at pairs T1:T2 and T1:T3 was significantly different for at least 1 pair, ($p<.001$). However, the mean scores of peaceful death right after the program completion and at one month after the program completion were not significantly different ($p>.05$) as shown in Table 2.

When testing group difference regarding mean scores of peaceful death and its components at three time points of measurement (at baseline, right after program completion, and one month after

Table 1. Difference of mean scores of peaceful death as perceived by end-stage cancer patients receiving chemotherapy between the experimental group and the control group using One-way repeated measure ANOVA.

Source of variance	SS	df	MS	F^a	*p-value*
Within group					
Time	7926.231	1.478	5361.891	22.411	.000**
Time, group	3732.491	1.478	2524.934	10.553	.000**
Error	20159.679	84.260	293.254		
Between groups					
Group	7358.466	1	7358.466	11.530	.001**
Error	36379.059	57	638.229		

***p*<.05, SS = Sum Square; df=degree of freedom; MS = Mean square

a =Greenhouse-Geisser correction was used to reduce type I error

Table 2. Difference in mean peaceful death as perceived by end-stage cancer patients who participated in the intervention group at baseline (T1), immediately after the intervention completion (T2), and one-month follow-up (T3) using Bonferroni (n=30).

Peaceful death	Average	SD	Average difference value	*p-value*
T1, T2	113.10	19.961	13.37	.000***
	137.10	12.513		
T1, T3	113.10	19.961	14.61	.000***
	138.86	12.772		
T2, T3	137.10	12.513	1.23	1.000
	138.86	12.772		

Table 3. Summary of group differences and differences from baseline of each component.

Components of Peaceful Death	Group Differences (*t* value)			Differences from Baseline (*t* value)			
				Intervention Group		Control Group	
	T1	T2	T3	T2	T3	T2	T3
1. Physical aspect	-1.16	-4.29**	-5.41**	-4.72**	-4.60**	-.81	-1.15
2. Psychological aspect	.76	-3.42**	-3.60**	-5.13**	-5.39**	-1.14	-.95
3. Social aspect	.49	-3.50**	-4.03**	-6.94**	-6.59**	-1.61	-1.40
4. Spiritual aspect	.21	-4.34**	-3.98**	-5.23**	-4.39**	-.58	-1.03
5. Place and environment	.58	-4.23**	-4.56**	-6.25**	-5.92**	-.65	-.97
Total scores	.18	-4.28**	-4.65**	-6.38**	-5.66**	-1.10	1.22

***p*<.001

program completion), it was found that the mean scores of peaceful death and the mean scores of its components were not significantly different at baseline (p≥.05).

The group difference regarding mean scores of peaceful death and its components were discovered right after program completion (T2), and one month after program completion (T3) (p<.001). A significant difference was also found, in peaceful death as perceived by end stage cancer patients who participated in the intervention group, right after program completion, and at one month after program completion when compared to baseline (p<.001) as shown in Table 3.

The results of this study indicate that the peaceful end of life care program is associated with a significant improvement of peaceful death as perceived by end-stage cancer patients receiving chemotherapy.

4. Discussion

The main purpose of this study was to test the effects of the 4-week peaceful end-of-life care program on peaceful death as perceived by cancer patients receiving chemotherapy.

The results revealed that there was a significant difference in the trend of peaceful death as perceived by end stage cancer patients who participated in the intervention group and those in the control group at baseline, right after program completion, and one month after program completion (F = 11.530, df = 1, p<.001). Regarding the change within the intervention group, the results showed a significant effect of the 4-week peaceful end of life care program on peaceful death within group at the intervention completion (t = 13.37, p<.001). However, the trend of change was not maintained at one month after the program completion.

This current study indicates that the peaceful end of life care program which was developed by using the *Theory* of the *Peaceful End of Life encompassing symptom management, promoting an experience of comfort and dignity, providing a sense of being at peace, supporting one to be close to* loved ones, and assisting one to achieve their last wishes, along with emphasizing effective communication, could help end-stage cancer patients to perceive a peaceful death, as described by Ruland and Moore [10].The findings indicate that if a person in the end of life stage received appropriate care, he/she could view death as more peaceful, in all facets. Additional analysis suggests that the patients felt less suffering from symptoms and experienced more comfort [19]. In terms of psychological aspects, the patients felt less worry and had an improved acceptance of death. Social and spiritual aspects were also reported as being fulfilled, as well as place and environment.

Importantly, in providing care for end-stage cancer patients, each activity and time needs to be flexible and reflective of the needs of the individual patient and their family. As was documented, good supportive nursing care and communication must be had in order to foster a good environment, without having to be rushed, and consider the readiness of the patients and their families [19]. Besides establishing a good relationship, the first step of the program focused on promoting the experience of comfort and pain alleviation. It was recommended that symptom management should be the first priority of providing care for end-stage cancer patients and other patients who are in end of life care. As patients may not only suffer from the disease itself, but also suffer from treatments, such as chemotherapy and radiation. Phamarcological and non-pharmacological strategies are needed for symptom management in end-of-life care. Therefore, providing knowledge regarding pain management and relieving suffering from side effects of chemotherapy or symptoms that may occur in end-stage cancer patients is essential [20].

Generally, all people need to maintain their sense of dignity. In end-of-life contexts, most people experience helplessness, powerlessness, and hopelessness, a sense of dignity is meaningful and should be maintained. The patients' needs and decisions should be responded to. In this study, the patients' needs and last wishes were explored. Such care which aims to help the patients achieve last wishes is emphasized. This will help the patients reduce anxiety and maintain their faith. In addition, inviting loved ones or significant people to be involved in care throughout the program created a better atmosphere in one's family; love and care were sustained. It is important to care for patients' psychosocial needs and to let them know that everyone will be with them at the end of life, to reduce feelings of isolation, abandonment, and feeling like a burden to those around them [21].

Lastly, in case it is appropriate, advising the patients to think about a prefered place to live at the end *of* life. In this study, *m*ost patients prefered to remain at home in the final stages of life, if possible. Allowing one to choose the place for his/her end *of* life stage may aid in the acceptance of his/her death in the near future.

However, in the intervention group, when comparing the mean scores of peaceful death as perceived by cancer patients right after program completion and at one month after program completion, no significant difference was found. It is possible that most patients had stage 4 cancer and had PPS score 40-70% at baseline. At the 1-month follow-up measurement, the cancer might have progressed and the patients developed more symptoms. Although no significant difference was found when comparing the mean scores of peaceful death at the intervention completion and the 1-month follow-up, a significant difference was found when comparing the mean scores of peaceful death at 1-month follow-up and at baseline. Thus, the effects of the 4-*week* peaceful end of life care program can promote peaceful death as perceived by end-stage cancer patients. This effect could be sustained at the 1-month follow-up.

5. Conclusion

This study examined the effects of the peaceful end of life care program which was developed by the researcher based on the Theory of the Peaceful End of Life by Ruland and Moore. The findings showed that the 4-week peaceful end of life care program could help end-stage cancer patients receiving chemotherapy achieve a sense of peaceful death in all aspects, physical, psychological, social, and spiritual, as well as their perception regarding place and environmental features for dying. The effect of the program can be sustained at least until the 1-month follow-up measurment. However, the trend of change was not captured after program completion.

6. Limitation

This study in end-stage cancer patients admitted for receiving chemotherapy in medical oncology is not curative. Therefore, results of this study cannot directly translate to another cancer such as hematologic cancer or other chronic diseases.

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