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Research Article

Health Belief as a Determining Factor in the Behavior of Complementary Therapy use in Cancer Patients Undergoing Treatment

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Abstract

Aims: Analyzing the correlation between health beliefs and the behavior of using complementary therapies in cancer patients.

Methods: The study was conducted at the Indonesian Cancer Foundation (YKI) East Java Branch, Surabaya in July 2024 using a correlation design and cross-sectional approach and added interview methods to support quantitative data results. The population of all cancer patients at YKI, 33 patients was obtained according to the inclusion criteria. The instruments used were the Health Belief Questionnaire, and the Scale for Attitudes Towards Complementary and Alternative Medicine (SACAM), and continued by in deep interview to support the quantitative data.

Results: Mean of health belief score was 77.88 ± 11.467 (good health belief category), and mean of the behavior of using complementary therapies was 42.48 ± 8.758 (neutral behavior category). The results of the Kendal Tau test ($p < 0.05$) showed a significant correlation between health beliefs and behavior of using complementary therapies ($p\text{-value} = 0.000$).

Conclusions: Health beliefs are an important factor for cancer survivors in determining their decision-making behavior regarding medical treatment and complementary treatments.

Keywords:

behavior, cancer, complementary therapies, health belief

INTRODUCTION

After being cancer diagnosed, patients have a mindset regarding health beliefs that they must make good decisions to overcome the disease (1). Patients who have been cancer diagnosed and are undergoing treatment have expectations regarding the success of the treatment, such as loss of pain, increased comfort, the cancer being cured, and a longer life span (2). Cancer patients who have undergone palliative care have worse expectations compared to cancer patients who are still in the early stages, palliative patients tend to feel that medical

treatment could not help extend their life expectancy, are less able to overcome the malignancy of the disease, only help a little to reduce cancer symptoms and medical treatment interferes with their daily activities, this condition is reversed in cancer patients who still respond well to treatment, where medical treatment increasingly brings improvements to their condition (3). The increasing use of complementary therapies in Indonesia is due to dissatisfaction with the results of conventional treatment, dissatisfaction with formal health service providers, and the positive effects of complementary therapy

treatment in terms of physical and emotional aspects (4). The choice of complementary therapy is still a matter of debate among the majority of doctors, due to differences in medical reasoning perspectives, where doctors believe that the patient's condition can worsen when the patient decides to switch to complementary therapy (5). However, there are also quite a few patients who feel the negative effects of alternative or complementary therapy, so they decide to refocus on medical treatment and reject complementary therapy in any form. (6).

The prevalence of cancer patients in the world has reached 19.3 million new cases, with the death toll reaching almost 10 million cases, this is expected to increase again in 2040, reaching 28.4 million cases, especially in countries that are experiencing a transition period (7). In Indonesia there are ten major types of cancer in 2022, namely breast cancer (36.1%), cervical cancer (17.3%), nasopharyngeal cancer (8.2%), lung cancer (7.4%) and rectal cancer (6.9%), leukemia 6.7%, ovarian cancer (6.3%), lymphoma (5.3%), colon cancer (4%), and prostate cancer 2%) (8). Meanwhile, the use of complementary therapy in Indonesia in cancer patients reached 56.25% (9).

Medical treatment that patients have undergone is often not continued due to it not being in accordance with their expectations, including distrust of the doctor's abilities, death of patients with the same treatment, poor physical condition of patients after medical therapy, and negative side effects of treatment (10). This condition is thought to cause patients and their families to decide to use complementary therapy as an alternative therapy. A study states that several factors that trigger cancer patients to choose complementary therapy as a treatment are because they are dissatisfied with medical treatment, encouragement from family and friends, patients feeling bad complications from medical therapy, and repeated

exposure to advertisements for certain complementary therapies (11). The results of medical treatment that cause serious side effects result in a discrepancy with the patient's expectations, triggering the patient to take a decision to undergo complementary treatment that is not conveyed to the doctor (12). Similar result was explained in a study which stated that cancer patients who were afraid of undergoing surgery preferred to use warm compress therapy with leaves on the area of the cancer lump, there were also cancer patients who meditated to reduce anxiety and fear, underwent acupuncture to relieve dizziness, overcome sleep problems and increase appetite, or did reflexology massage to calm themselves (13).

The explanation above shows that cancer patients are more likely to choose complementary therapy as an alternative to treatment, due to unfavorable beliefs about cancer and inappropriate expectations regarding medical treatment. Even though complementary therapy can be used as a companion therapy that goes hand in hand with medical therapy to further improve the condition of cancer patients, this is still not revealed in previous research. Also supported by a study that explains that during active cancer treatment through medical therapy, patients are actually recommended to undergo complementary therapy as a complement with the aim of helping to overcome or alleviate symptoms that appear physically and psychologically such as meditation based stress reduction (MBSR), mindfulness based cognitive therapy, tai chi, qigong, Ginseng concoction, acupressure, music therapy, progressive muscle relaxation, reflexology, and yoga (14).

This research was conducted at the Indonesian Cancer Foundation (YKI) East Java Branch, Surabaya, where all cancer patients at YKI received cancer medical therapy in the form of chemotherapy, radiation, and a combination of chemoradiotherapy and surgery, with each

patient accompanied by their family. There has never been a survey of whether cancer patients at YKI use complementary therapies while undergoing medical therapy. The research aims to explain the correlation between health beliefs and the behavior of using complementary therapies as companions to medical therapy in patients and families.

METHODS

Study Design

This research was conducted in July 2024, with a correlation design and cross-sectional approach added interview methods to support quantitative data results. The population is all cancer patients living at the Indonesian Cancer Foundation (YKI) East Java Branch, Surabaya.

Sample

The sample obtained was 33 patients who met the inclusion criteria, namely (1) at least 18 years old, (2) undergoing cancer treatment such as surgery, chemotherapy or radiation, or chemoradiotherapy. Meanwhile, the exclusion criteria were cancer patients who were experiencing severe physical dysfunction that could interfere with the research process.

Data Collection

The research instruments used was a health belief questionnaire consisting of 17 questions with a Likert scale rating of 1-6, namely score 1 = strongly disagree, score 2 = disagree, score 3 = unsure = score 4 = somewhat agree, score 5 = agree, score 6 = strongly agree. For negative questions, scoring is done in reverse. The range of scores obtained is between 17 – 102, with the following categories being divided into scores 17 – 45 poor health belief, score 46 – 73 fair health belief, score 74 – 102 good health belief. Health belief questionnaire instrument has been tested for validity and reliability by researchers with an r-value of

0.565 – 0.865 and an alpha value of 0.766, it mean that all 17 questions items are declared valid and reliable.

The second instrument used was the Scale for Attitudes Towards Complementary and Alternative Medicine (SACAM), which consists of 12 questions with a Likert scale including a score of 5 = strongly agree, score 4 = agree, score 3 = unsure, score 2 = disagree, score 1 = strongly disagree. For negative questions, scoring is done in reverse. The score range obtained was 12 – 60, with the following categorization: score of 12-28 negative behavior towards the use of complementary therapy, score of 29 – 44 neutral behavior towards the use of complementary therapy, and score of 45 – 60 positive behavior towards the use of complementary therapy. This instrument has been tested for validity and reliability by researchers with an r-value of 0.581 – 0.866 and an alpha value of 0.773 it mean all 12 questions are declared valid and reliable.

The research has gone through an ethical clearance process by the health research ethics commission of the Faculty of Medicine, Widya Mandala Surabaya Catholic University with number 0007/WM12/KEPK/DSN/T/2024 with the results being declared ethically acceptable. The researcher also applied ethical principles in this research by providing explanations and informed consent from respondents who were willing to be involved in the research. Anonymity and coding systems in the questionnaire were also implemented to maintain the confidentiality of respondent data.

Data Analysis

After completing the questionnaire by the respondents, editing is then carried out regarding the completeness of the questionnaire, scoring, and coding. The statistical test used was Kendal Tau ($p < 0.05$).

RESULTS

Table 1. Demographic Data of Cancer Patient Respondents, Indonesian Cancer Foundation East Java Branch, July 2024

Demographic Data	Characteristics	Frequency (n = 33)	Percentage (%)
Age	Mean \pm SD (51.82 \pm 13.19)		
Sex	Female	23	69.7
	Male	10	30.3
Education	No School	1	3.1
	Elementary School	6	18.2
	Junior High School	10	30.3
	Senior High School	8	24.2
	College	8	24.2
Work	Jobless	24	72.8
	Self-employed	7	21.2
	Private	1	3
	Civil servants	1	3
Marital Status	Married	27	81.9
	Widow	4	12.1
	Widower	1	3
	Single	1	3
Cancer Stage	Stage 1	4	12.1
	Stage 2	6	18.2
	Stage 3	17	51.5
	Stage 4	6	18.2
Types of Cancer	Breast	3	9.1
	Cervix	17	51.5
	Nasopharynx	5	15.2
	Parotid	2	6.1
	Colon	3	9.1
	Leukemia	1	3
	Lungs	1	3
	Thyroid	1	3
Diagnosed with cancer	< 1 year	16	48.5
	1 - 2 years	11	33.3
	3 - 4 years	2	6
	>5 years	4	12.2
Current therapy	Chemotherapy 1-6 times	7	21.2
	Radiation 1-10 times	5	15.2
	Radiation > 10 times	10	30.3
	Chemotherapy \leq 6 times &	7	21.2

Demographic Data	Characteristics	Frequency (n = 33)	Percentage (%)
	Radiation < 10 times		
	Chemotherapy < 6 times & ≥ 10 times Radiation	1	3
	Chemotherapy > 6 times & Radiation > 10 times	3	9.1
Complementary Therapies During Medical Therapy	Use	23	69.7
	Do not use	10	30.3
Types of Complementary Therapies Undertaken During Medical Treatment	White Turmeric	5	22
	Herbal Soursop Leaf	4	18
	Herbal Bajakah Wood	4	18
	Herbal Black Cumin	2	9
	Herbal Caladium	1	4
	Herbal Bruise	1	4
	Rhizome herbs	1	4
	Relaxation therapy	1	4
	Spiritual therapy	2	9
	Affirmation therapy and meditation	1	4
	Back massage therapy	1	4

Table 1 shows that the average age of respondents is 51.82 ± 13.19 , the majority are female (69.7%), have a junior high school education (30.3%), most of respondents jobless (72.8%), are married (81.9%), suffer from stage 3 cancer 51.5%, with the most common type of cancer being cervical cancer (51.5%), the majority having only been diagnosed with cancer < 1 year (48.5%), with ongoing therapy the most frequently undergone radiation with a frequency of > 10x (30.3%), the majority of respondents used complementary therapy during medical therapy (69.7%), with the type of complementary therapy used mostly being herbal plants (71%) consisting of white turmeric, soursop leaves, bajakah wood, black cumin and taro.

Table 2. Descriptive Statistics for Health Belief Variables and Behavioral Use of Complementary Therapies

	Min	Max	Mean	Std. Deviation
Health Belief	52	92	77.88	11.467
Behavioral Use of Complementary Therapies	24	56	42.48	8.758

Table 2 shows that the mean health belief score of respondents is 77.88 ± 11.467 which is included in the good health belief category, while the behavior of using complementary therapies shows neutral behavior with the average score being 42.48 ± 8.758 .

Table 3. Statistical test results

Variable	Kendal Tau Test	Behavioral Use of Complementary Therapies
Health Belief	Correlation Coefficient	0.901
	Sig. (2-tailed)	0.000

Table 3 shows that there is a very strong ($r = 0.901$) and significant (p -value = 0.000) correlation between health beliefs and the behavior of using complementary therapies in cancer patients.

DISCUSSION

Health beliefs are individual values or beliefs related to health behavior (15). Based on this research, obtained good health belief category. The good health beliefs that these respondents have been shown in their statements that the majority of them have a big responsibility for their health condition, are active in controlling and carrying out medical therapy, have a high desire to recover, believe that medical treatment and some traditional treatments can bring a good health changes, and respondents also felt that their condition had improved while undergoing medical cancer treatment. This is in line with the results of other studies which state that cancer patients' health beliefs tend to be based on the knowledge they have, the support they receive, and the benefits they obtain from a health action (16). Based on the results of interviews with respondents, they had a perception that cancer is a disease requires immediate treatment because it is malignant. This perception causes respondents to make a conscious decision to undergo medical treatment or additional therapy. Similar result were conveyed in previous studies which stated that health beliefs emphasize an individual's perception of perceptions of the level of severity felt, the benefits obtained, and the obstacles that may be encountered (17). Characteristics of the good health beliefs are that individuals take health care measures if they believe that they are at risk of contracting a disease or if these health measures can cure a disease or reduce the symptoms it causes, individuals tend to accept, take and maintain an action. Health, if they feel that there are positive benefits obtained (18).

In this research, information was also obtained that majority of respondents used

complementary therapy as a complement to medical therapy. The majority of respondents used herbal medicine, namely consuming traditional herbs such as white turmeric, soursop leaves, bajakah wood, black cumin, taro, and rhizomes. However, some respondents used non-herbal complementary therapies such as cupping, relaxation therapy, spiritual therapy, affirmation, and meditation therapy and back massage. A patient reported feeling that their condition improved after combining complementary therapies after receiving chemotherapy, namely by consuming vitamin C and vitamin D, undergoing homeopathy therapy, acupuncture, consuming herbal medicines, fruit and vegetables (19), body manipulation and exercise energy (20). Based on the results of interviews with respondents, the majority of them used the complementary therapy after they were at home when after completing each medical therapy session, it means when they were during chemotherapy and radiation treatment in the hospitals, they only used drugs recommended by the doctor. Complementary therapy is used after treatment to increase symptom improvement as a side effect of therapy so that the condition can quickly recover it be ready for the next therapy session. The similar result was expressed that patients are more likely to choose and use biological-based therapies such as herbs and food supplements after completing conventional medical treatment because they are satisfied with the benefits obtained and also they experience fewer side effects, so they are more improve their quality of life (21). Herbal medicine has become widespread in society and has become an option as an alternative or complementary treatment, but with the increasing demand for herbal products, strict quality control measures are required to ensure the consistency and safety of herbal medicines so that herbal products can be accounted for (22). In this study, several respondents stated that they reported to doctors about

the using of complementary therapy, but the doctor did not recommend using this therapy and gave directions to focus on medical therapy only. A study showed similar results that the majority of cancer patients do not tell their oncologists when they use complementary therapy, especially herbal medicine, because doctors usually forbid it because they are worried about other side effects, while doctors are more supportive of complementary mind-body therapy which can support psychological improvement (23). However, in this study, some respondents reported still used the complementary therapies as a complement to medical therapy. This is because patients feel great benefits from these complementary therapies. A study explains that the main reason for complementary therapy patients is because of increased physical and emotional well-being and an increase in the body's ability to fight cancer, thus creating satisfaction for patients and increase quality of life(24). A similar result was conveyed in a study which stated that the use of herbal medicine is increasing because it is considered a strategy to reduce the side effects of chemotherapy or radiation and can even improve the overall quality of life of cancer patients (25). In this study, the majority of respondents who were interested in using complementary therapy were female patients who had just been diagnosed with cancer, because they still in the phase of expecting the health problems to be resolved soon. Another study also shows the same results, that female patients who are younger and have higher education and have had cancer for longer tend to be more interested in using complementary therapies in addition to medical therapy (26).

In this research also found that respondents focused on carrying out medical treatment, because they thought that complementary therapies, especially herbal ones, would make the situation worse. Several respondents provided testimony that their condition after chemotherapy and radiotherapy was better than when they

were still undergoing complementary therapy. Another study stated that the majority of cancer patients did not agree that complementary therapy was more effective than medical therapy and they mostly agreed that complementary therapy had many side effects that aggravated their condition (27).

In this study, the results showed that there was a significant correlation with a very strong level of relationship between health beliefs and the behavior of using complementary therapies in cancer patients (p-value 0.000 and r 0.901). Where the health beliefs they believe in regarding cancer and its medical management will lead patients to choose other therapies as companions to make the therapy more effective in curing the cancer they are experiencing. Likewise, a researcher's statement explains a similar result that positive beliefs about the success of treatment encourage patients to choose effective therapies, including the use of complementary therapies as a complement to medical treatment, because they feel the benefits are meaningful for their health (28).

STUDY LIMITATIONS

The limitation of this study is the absence of previous information regarding the knowledge of respondents in this location related to complementary therapy, therefore respondents only know that complementary therapy is herbal therapy, even though complementary therapy has a wide scope, but it turns out that it is still not widely known by respondents. Meanwhile, supporting papers related to the details of the side effects of complementary therapy in the form of herbal medicine, especially when given together with chemotherapy or radiation, have not been widely studied, this has an impact that it cannot be explored further in depth in this study.

CONCLUSION

Health beliefs are an important factor for cancer survivors in determining decision-

making behavior related to commitment in undergoing medical treatment or even combining medical treatment with complementary therapy. More in-depth clinical testing is needed on the side effects of herbal therapy when given together with medical drugs such as chemotherapy. In addition, support from medical personnel is needed so that patients can undergo other external complementary therapies that do not affect cancer drug interactions in order to reduce physical psychological symptoms so that quality of life can be improved.

Conflict of Interest

I declare that I do not have any competing interest, especially with the study funder

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