



# CRITICAL MEDICAL AND SURGICAL NURSING JOURNAL

Vol. 12, no. 2, October 2023

Journal Homepage: <https://e-journal.unair.ac.id/CMSNJ>



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## The Correlation Between Motivation and Self-Care Mangement Among Leukemia Patients Based on Orem's Theory

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### ARTICLE HISTORY

Received: June 26, 2023  
Accepted: October 7, 2023  
Published: October 9, 2023

### KEYWORDS

Motivation, Self-care management, Leukemia, Orem's theory

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### ABSTRACT

**Introduction:** Leukemia is one of the most diagnosed types of cancer and a cause of death worldwide. Patients who experience severe side effects of cancer treatment tend to experience less than optimal self-care management. Leukimia patients in treatment often complain of fatigue, weakness, lack of energy, and nausea which hinder them in self-care management. The purpose of this study was to determine the relationship between motivation and self-care management.

**Methods:** This study used an analytic descriptive research design with a cross sectional approach. Population on this research were members of Chronic Granulocytic Leukemia (it is known as "ELGEKA"), East Java, Indonesia. The sample size was 69 respondents using purposive sampling. The independent variable was motivation and the dependent variable was self-care management. Data was analyzed using Spearman Rho analysis with level of significance 0.05.

**Results:** The results of this study indicated that there was a relationship between motivation and self-care management ( $p=0.000$ ) and ( $r=0,531$ ).

**Conclusion:** Nurses have an important role in identifying and increasing patient motivation to carry out self-care management and changing their attitudes to improve health and disease care. The recommendation for future researchers is to develop research with interventions to improve self-care management in leukemia patients.

### Cite this as:

Zahra, N.R., Bakar, A., Pradanie, R., Kurniawati, N.D. (2023). The Correlation Between Motivation and Self-Care Mangement Among Leukemia Patients Based On Orem's Theory. *Crit. Méd. Surgical. Nurs. J.*, 12(2),51-56.

## 1. INTRODUCTION

Leukemia is a condition in which there is abnormal and uncontrolled growth of white blood cells. It is characterized by an increase in the number of leukocytes in the blood or bone marrow that disrupts the normal functioning of the body (Zainuddin & Maru, 2019). Leukemia patients often face side effects from the treatment they undergo. To overcome these side effects, patients need to adjust their activities, diet, get enough rest, and take good care of themselves (Treenai, 2016).

Previous research by Ilmiyah showed that foods suitable for leukemia patients are high energy foods such as potatoes, bread, and bananas, as well as high protein foods such as meat, fish, and beans (Ilmiyah, 2017). This helps maintain the stamina and body condition of leukemia patients during the treatment

and healing process (Rahmadani, 2022). One of the important principles in the treatment of cancer patients is self-care management or the patient's ability to cope with the symptoms experienced and recognize the side effects of treatment. This includes the patient's belief in themselves to be free from symptoms, able to undergo treatment, and evaluate the actions taken (Ahmadzadeh et al., 2021).

Self-care management involves food management, exercise, and mind management such as meditation (Wijayanti, 2018). In addition, good self-care behavior is also needed, especially in controlling oral chemotherapy treatment for leukemia patients (Treenai, 2016). Patients with more severe treatment side effects tend to have decreased ability to care for themselves (Docherty & Sandelowski, 1999 in Treenai, 2016). Some blood cancer patients experience fatigue, weakness, lack of

energy, lethargy, nausea, and even difficulty in performing activities, so they need the help of others in self-care. Cancer patients' fatigue can lead to weakness, lack of concentration, feeling unwell, depression, and lack of motivation (Latifah & Astuti, 2016). However, the relationship between motivation and self-care management in leukemia patients remains unexplained.

Leukemia is one of the most diagnosed types of cancer and a cause of death worldwide. Data from GLOBOCAN in 2018 shows that leukemia is the 15th most commonly diagnosed cancer and the 11th cancer that causes death, with a total incidence of 437,033 cases and 309,006 deaths. In Indonesia alone, cancer, including leukemia, is the leading cause of death with a percentage of 6.6%. The mortality rate due to leukemia in men is higher than other types of cancer, reaching 50-60% (Eka Aulia & Rahmasari, 2019). At Soetomo Hospital, the prevalence of leukemia patients treated has increased every year (Warsiki & Larasati, 2018).

In a preliminary survey at Yayasan Kanker Indonesia East Java Surabaya, there were 83 leukemia patients who were members of the East Java Chronic Granulostic Leukemia (it is known as "ELGEKA") community. The problem faced by leukemia patients is the side effects of treatment, such as fatigue, memory loss, red eyes, nausea, and vomiting. As a result, not all patients regularly undergo treatment, only about 20 people do so on time. To overcome these side effects, it is important for leukemia patients to know about self-care management, including dietary strategies, physical activity, stress management, and adherence to treatment (Falah & Ariani, 2022).

A commonly used therapy for the treatment of leukemia patients is the drug imatinib, which belongs to the Tyrosine Kinase Inhibitor (TKI) class. This drug is used in the treatment of Chronic Myeloid Leukemia (CML) by inhibiting tyrosine kinase activity targeted at BCR-ABL1 (Niruri et al., 2021). Cancer treatment can cause physical and mental side effects in patients. These side effects can affect patients' self-concept and behavior. To overcome these side effects, cancer patients use self-care management such as diet management, meditation, and physical activity.

The cause of leukemia is not known with certainty, but several factors such as family history, radiation exposure, nutrition during pregnancy, parental smoking behavior, and Down syndrome in parents can increase the risk of leukemia. Leukemia treatment takes a long time and causes fatigue in patients, which can interfere with their self-care. Many leukemia patients also experience

psychosocial problems such as depression and anxiety (Pratiwi et al., 2020).

Motivation plays an important role in the self-care of leukemia patients. Factors such as knowledge, individual awareness, and individual characteristics can affect patients' motivation to perform self-care. Age also affects motivation, with older people tending to have high motivation to maintain health. Although there is a relationship between motivation and self-care in patients with other conditions, specific research on self-care management in leukemia patients has not been conducted. Therefore, further research is needed to explore the relationship between motivation and self-care management in leukemia patients, taking into account factors such as health literacy, self-efficacy, and social support (Hosseini et al., 2021).

Leukemia patients experience decreased physical abilities due to disease symptoms or treatment side effects. In their self-care, motivation plays an important role (Bryant et al., 2018). This study aims to examine the relationship between motivation and self-care management in leukemia patients based on Orem's theory. According to Dorothea Orem's self-care nursing theory, patients have the ability to care for themselves called self-care agency. This ability is implemented in self-care management. Factors such as age, gender, developmental status, health status, willpower, motivation, and knowledge influence self-care management. Motivation is one of the factors that influence a person in implementing self-care management.

## 2. METHODS

### Study Design

This study used an analytic descriptive research design with a cross sectional approach. The independent variable was motivation and the dependent variable was self-care management.

### Population, Samples, and Sampling

The population were leukemia patients who are members of the Chronic Granulostic Leukemia or ELGEKA community at the Surabaya Cancer Foundation, East Java, Indonesia. This study used purposive sampling technique and there were 69 respondents in total by Slovin formula. The inclusion criteria in this study were 1)  $\geq 18$  years old patients; 2) patients who have a smartphone and/or can access the questionnaire; 3) patients with leukemia  $\geq 1$  year. Exclusion criteria in this study were leukemia patients with cognitive impairment (dementia, delirium etc).

### Instruments

Demographic questionnaires were used to analyze the characteristics of respondents including gender, educational history, age, length of leukemia and marital status. SCHFI (Self-Care of Heart Failure Index) 6.2 questionnaire. The modified SCHFI was used to measure the self-care management of leukemia patients. This questionnaire consists of 21 questions with a Likert scale with the highest score being 84 while the lowest score is 21. The Motivation Questionnaire adopted from Wahyuni et al. (2014) was used to measure motivation. This questionnaire consists of 20 questions with a Likert scale with the highest score 80 while the lowest score is 20.

### Procedure

The data collection instruments used were questionnaires that given to leukemia patients who are members of the Chronic Granulostic Leukemia or ELGEKA community at the Surabaya Cancer Foundation, East Java, Indonesia. Data collection peiode was April, 29 to May, 13 2023.

### Data Analysis

The data that has been collected will be analyzed with Spearman's Rho correlation statistical test with a significance level  $\alpha$ , 0.05

### Ethical Clearance

This study has received a certificate of ethical approval from the Health Research Ethics Commission of the Faculty of Dentistry, Universitas Airlangga on May 15, 2023 with number 488/HRECC.FODM/V2023.

## 3. RESULTS

Table 1. shows that the majority of respondents in this study were male 57.97%. diploma/graduate education 49.28%. Mostly of respondents were 46-65 years (49.2%). Mostly of them married (62.31%). Most respondents have suffered from leukemia for 6-10 years (42.03%).

Table 2. shows that most respondents have high motivation (91.3%), while the remaining 6 people have low motivation (8.7%). In the dependent variable, it shows that most respondents have good self-care management (88.4%). There are only 8 respondents or 11.6% who have not good at self-care management. Based on the table above, it shows that there is a significant relationship between motivation and self-care management in leukemia patients. The p value obtained is 0.000, which means the hypothesis is accepted bse on baseline p value <0.05. The results of the analysis also showed the Spearman Rho correlation coefficient of 0.531, it indicate a positive correlation (unidirectional) between motivation and self-care management. The higher the motivation, the higher the level of self-care management, and vice versa.

Table 1. Distribution of respondents based on age, gender, marital status, duration of leukemia, education level in ELGEKA, East Java, Indonesia.

Characteristics	Criteria	f	%
Ages	21-35	19	27,54
	36-45	16	23,18
	46-65	34	49,28
Gender	Man	40	57,97
	Women	29	42,03
Marital Status	Married	59	85,5
	Not Married	10	14,5
Duration of Illness	1-5 years	19	27,54
	6-10 years	29	42,03
	11-15 years	10	14,49
	16-20 years	8	11,59
	>20 years	3	4,35
Education Level	Elementary School	2	2,9
	Junior High School	4	5,8
	Senior High School	29	42,02
	Diploma/Bachelor	34	49,28

Table 2. Distribution of the relationship between motivation and self-care management in leukemia patients

Motivation Variable	Self-care Management Variable				Total	
	Good		Poor		F	%
	f	%	f	%		
High	59	93,7	4	6,3	63	91,3
Low	2	33,3	4	66,7	6	8,7
Total	61	88,4	8	11,59	69	100

Spearman Rho p= 0,000 r=0,531

#### 4. DISCUSSION

The higher the motivation, the better the self-care management, and vice versa. Most of the leukemia respondents in this study showed a high level of motivation and good self-care management, which amounted to 93.7%. The majority of respondents agreed on the importance of information and support from close people, the community, and health workers as external motivation. In addition, the majority of respondents also had good self-care management in terms of keeping appointments with health workers when seeking treatment.

Other study in chronic patients (long term care patients) also found the same result. Basri et al. 2022, which also showed a significant relationship between motivation and self-care management. In addition, a cross-sectional study conducted by Handriana & Hijriani (2020) on diabetes mellitus patients found a significant relationship between motivation and self-care management in the Majalengka Health Center working area. Another study conducted by Lukitasari et al. (2021) also revealed that high motivation contributes to improving self-care management in patients with diabetes mellitus.

However, this study also found that a small proportion of respondents had high motivation but poor of self-care management. On the other hand, there were respondents with low motivation, had good self-care management, while most of them had poor self-care management. The distribution of respondents' answers showed that the majority disagreed, especially on the parameters of intrinsic motivation, such as feeling embarrassed if they did not do self-care management. The majority of respondents also did not exercise regularly.

In this study, self-care management can be influenced by several factors such as age, gender, education level, family support, and length of illness. Older people often to achieve greater emotional stability. Cramm et al. (2012), showed that self-management abilities are related to well-being and depression among older. Older adults gained the ability of having positive frame of mind and boosts confidence which, in turn, encourages people to engage in activities and not to give up easily. Therefore older people often having better self-care management than the younger ones. A higher level of education tends to provide a higher acceptance of health information and awareness of self-care management. González et al. (2014), showed that respondents with a high level of knowledge showed a higher level of self-care management than respondents with a low level of knowledge. Education level is a determining factor in health condition knowledge and related health behaviors, and patients with a high level of education score better on self-care management scales.

Gender also plays a role. In line with Mei et al. (2019), self-care maintenance was better in women than in men. Men perceived more social support

than women in this sample, which may impede the self-care of men because they tend to depend on others rather than on themselves, in the other hand, women learned to cope with the symptoms and developed proper self-care maintenance. Individual motivation in taking action is influenced by cognitive factors and thought processes that are influenced by individual knowledge (Jung & Jeong, 2016). A person will be motivated if the action is in accordance with the goals, plans, and expected results. Motivation awakens the desire and drive of individuals to achieve the desired results. Motivation also plays a role in influencing individual behavior through emotional aspects, so that individuals act in accordance with the goals set to achieve satisfaction.

For leukemia patients, good motivation is very important in self-care management so that the treatment process can run well. Motivation is related to the needs and beliefs of individuals in undergoing the steps necessary to achieve certain goals (Jung & Jeong, 2016). Each individual has different needs. The level of motivation towards self-care management is influenced by individual beliefs. Motivation is also a strong predictor of behaviors related to self-care management, physical activity, diet, and weight control. Self-care management is a positive activity, and it is expected that with the right motivation, leukemia patients can achieve good self-care management, so as to prevent complications and cope well with side effects.

#### CONCLUSION

Motivation shows a relationship with the self-care management of leukemia patients. Leukemia patients with high motivation also show good self-care management. Leukemia patients need to increase motivation by increasing knowledge through structured health education about leukemia, management and side effects of treatment. Nurses have an important role in identifying and increasing patient motivation in carrying out self-care management and changing attitudes to improve health and disease services. Recommendations for future researchers are to develop research with interventions to improve self-care management. In addition, other factors can be identified that influence self-care management in leukemia patients, such as family support and self-efficacy. Future researchers can also explore and develop self-care management instruments specific to leukemia.

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