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DEPRESSION AND FATIGUE OF BREAST CANCER PATIENTS RECEIVING CHEMOTHERAPY DURING THE COVID-19

Dwi Retnaningsih¹*, Roudhotul Auliyak¹, Mariyati¹, Enggar Nurnaningsih²

¹School of Nursing, Universitas Widya Husada Semarang, Jl. Subali Raya No.12, Krapyak, Kec. Semarang Barat, Kota Semarang, Jawa Tengah 50146, Indonesia

²RSUP. Dr Kariadi Semarang, Jl. DR. Sutomo No.16, Randusari, Kec. Semarang Selatan, Kota Semarang, Jawa Tengah 50244, Indonesia

*dwiretnaningsih81@yahoo.co.id

ABSTRACT

Depression in breast cancer patients includes mental shock, inability to accept reality, hopelessness, fear of death, and fear of the future. Depression creates long periods of sadness and worry, usually accompanied by feelings of worthlessness. Fatigue is a symptom that often appears in cancer patients undergoing chemotherapy. Associated with the conditions of the COVID-19 pandemic, cancer patients have an increased risk of transmitting COVID-19 because they have decreased endurance. This study aims to determine the relationship between depression and fatigue in breast cancer patients undergoing chemotherapy at Hospital Sultan Agung Semarang Indonesia. The instruments used in this study were questionnaire of the hospitals anxiety and Depression Scale (HADS) and questionnaire of fatigue, 30 female respondents who suffer from breast cancer and have undergone chemotherapy. Rank Spearman data analysis. P value = 0.000 and correlation coefficient value r = 0.671. There is a relationship between depression and fatigue in breast cancer patients undergoing chemotherapy which has an impact on adherence to chemotherapy for breast cancer patients. The higher the level of depression is, the more severe the level of fatigue in cancer patients.

Keywords: breast cancer; chemotherapy; depression; fatigue

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INTRODUCTION

COVID-19 cases have spread all over the world. On January 31, 2020, World Health Organization (WHO) announced that COVID-19 is considered as a public health emergency, which poses a threat for several countries and requires an international coordination.(Li et al., 2020; Zhou et al., 2020) On March 11, 2020, WHO announced COVID-19 as a global pandemic case.(Cucinotta & Vanelli, 2020; WHO, 2020) Less than three months since the first COVID-19 case was reported in China, the pandemic has spread all around Asia and certainly Indonesia. (Setiati & Azwar, 2020).

Breast cancer is a type of disease that most likely to be exposed by COVID-19. It is a serious disease characterized by an uncontrolled growth and continuous spread of abnormal cells that can damage surrounding tissues. In 2018, according to (WHO, 2018) cancer patients increased to 18,1 million new cases with a death toll of 9.5 million. There are 627.000 women died of breast cancer in 2018. Basic Health Research 2018 showed that the prevalence of breast cancer in Indonesia based on doctor's diagnoses increased by 0.14% to 0.18% in 2018.

The treatment provided is varied such as radiotherapy, hormone therapy, surgery and chemotherapy.

Chemotherapy impacts on the physic and psychology of the patients. The physical impacts include nausea, hair loss, loss of appetite and fatigue. Meanwhile, the psychological impacts include anxiety and depression. Cancer patients feel anxious over the possibility of cancer recurrence. This study supplements the knowledge on the experience of breast cancer survivors. (De Vries et al., 2014) Moreover, the incurability of breast cancer and the possibility of recurrence lead the patients to be more psychologically depressed. (Grabsch et al., 2006) This study aims to understand the correlation of depression and fatigue of cancer patients undergoing chemotherapy.

METHOD

This study is a quantitative research with a cross sectional design. The respondents were women had breast cancer and underwent chemotherapy in Sultan Agung Hospital Semarang during July-September 2020. The criteria of respondents were having age > 18 years old and willing to become the respondent. This study was conducted during COVID-19 pandemic in which the social distancing were regulated to the patients visiting hospital and the researcher was required to wear Personal Protective Equipment (PPE) as regulated in the hospital health protocol.

The questionnaire used in this study is HADS (Hospital Anxiety and Depression Scale). There were 7 statements to assess depression (question number 2, 4, 6, 8, 10, 12, and 14), which consists of favorable and unfavorable sub-scales. Question number (2, 4, 9, 10, 12, 14) determine the category of favorable with a likert scale measurement of 0= very often, 1= quite often, 2= occasionally, 3= never. Whereas, question number (1, 3, 7, 8, 11, 13) determine the category of unfavorable with a measurement of 0= never, 1=occasionally, 2= quite often, 3= very often. The classification of score is the sum of all the answers, namely normal (0-7), mild (8-10), moderate (11-15), and severe (16-21).

The questionnaire on fatigue consists of 15 statements using 2 types of statements which are favorable and unfavorable. Favorable statements consist of 11 questions (question number 1, 2, 3, 4, 5, 6, 7, 8, 9, 13, 14, 15) with a likert scale measurement of 1= never, 2= sometimes, 3= often, 4= always. The unfavorable statements consist of 3 questions (question number 13, 14, 15) with a scoring category of 1= always, 2= often, 3= sometimes, 4= never. The classification of the score is stated as no fatigue (1-15), mild fatigue (16-30), moderate fatigue (31-45), severe fatigue (46-60). The instruments used in this study were questionnaire of the hospitals anxiety and Depression Scale (HADS) and questionnaire of fatigue analyzed by using *Spearman rho* with *p Value* < 0,05.

Before conducting the research, the researcher conducted an ethical test and obtained a certificate of ethical conduct with the number of No.25/FC/KEPK/2020. Research ethic was carried out by asking the inform consent. Respondents should be informed in detail about the aims of the study and have the freedom and rights to participate or decline to be a respondent. First and foremost, the respondents signed the inform consent to be a respondent. After that, the researcher explained about the questionnaire in detail. Lastly, the respondents filled in the questionnaire and were allowed to ask any questions regarding the questionnaires. The name of respondent was not included or considered as anonymity.

RESULTS

Table 1. Characteristics of Respondents (n=30)

Characteristics	f	%	
Age			
30-45	13	43,3	
>45	17	56,7	
Education			
No Education	12	40%	
Elementary School	7	23,3	
Middle School	5	16,7	
High School	4	13,3	
Tertiary Education	2	6,7	
Employment			
Civil Servant	5	16,7	
Housewife	16	53,3	
Labor	9	30	

Table 1 showed that the majority of respondents aged > 45 years old were 17 respondents whereas those aged 30-45 years old were 13 respondents. 40,0% of the respondents never attend school and 23,3 % had elementary school diploma. Besides, 6,7% of the respondents graduated from a tertiary education. Most of the respondents work as a housewife (53,3%) and around 30,0% works as a labor.

Table 2. Distribution of Respondents Based on Depression (n=30)

Level of Depression	f	%
No Depression	7	23,3
Mild Depression	6	20,0
Moderate Depression	8	26,7
Severe Depression	9	30,0

Table 2 showed that most of the respondents experienced severe depression as many as 30%.

Table 3. Distribution of Respondents Based on Fatigue (n=30)

Level of Fatigue	f	%
No Fatigue	8	26,7
Mild Fatigue	4	13,3
Moderate Fatigue	7	23,3
Severe Fatigue	11	36,7

Table 3 showed that most of the respondents experienced severe fatigue as many as 36,7%

Table 4.

Relationship between Depression and Fatigue of Breast Cancer Patients Undergoing
Chemotherapy (n=30)

Depression		lo igue	Mild Fatigue		Moderate Fatigue		Severe Fatigue		Total		rho	P
	f	%	f	%	f	%	f	%	f	%	_	Value
No Depression	4	13,3	2	6,7	0	0	1	3,33	7	23,3		
Mild Depression	3	10	2	6,7	1	3,33	0	0	6	20	0,671	0,000
Moderate Depression	1	3,33	0	0	3	10	4	13,3	8	26,6		
Severe Depression	0	0	0	0	3	10	6	20	9	30		

Table 4 showed that the percentage of patients with severe depression and fatigue as many as 30% (9 respondents). On the other hand, there were 7 respondents (23,3%) who were not depressed. The statistical test results using Spearman rho obtained *p value* of 0,000 which means there is a correlation between depression and fatigue. The correlation coefficient value r=0,671 indicated that the degree of correlation is strong. It can be concluded that the higher the level of depression, the more severe the level of fatigue of the patients.

DISCUSSION

Depression experienced by breast cancer patients undergoing chemotherapy

Based on the results of this study, it showed that there were 9 respondents experiencing severe depression (30,0%). It occurred due to the chemotherapy given to them and the longer time to recover from the disease. Depression is a phenomenon often found in patients with chronic disease like breast cancer. The depression experienced by the breast cancer patients includes mental shock, fear, inability to accept reality, hopelessness, fear of death, and fear of future. Depression can also cause sadness and anxiety for a long period of time which is sometimes followed by a feeling of worthlessness. The risk of depression for breast cancer patients is varied if viewed from the perspective of treatment. Certain cytokines related to cancer treatment have been linked to depression. Some evidence suggests that oncology surgery can also be linked to depression. Several evidences also suggest that oncology operation can also lead to a depression of cancer patients. Fatigue and depression are also closely related and are equally significant symptoms in cancer treatment. Both of these conditions are common in cancer patients. (Fitrianda, 2013).

Depression experienced by the patients must be handled properly in order to not interfere with the undergoing treatment. If depression is not treated well, it can hinder the therapy and healing process. Each individual can experience depression due to the problems regarding health treatment. Advanced stage cancer patients particularly those who underwent bone marrow transplantation are at high risk of developing depression. The symptoms of depression or sadness (such as anorexia, sleep disturbance, fatigue, or weight loss) are likely to happen to cancer patients. The depressed patients might feel worthless, guilty, hopeless, or helpless. On the other hand, there were patients who experienced grief but were able to find happiness in every situation and able to plan their future. Health condition, the use of medication in the past, depression, or mental illness is the major risk factors of depression. (Schaefer et al., 2018) Depression is associated with the decrease of quality of life, reduced medication adherence, increase of substance use, poor treatment, rapid CD4 cell decline, and increase of mortality. The symptoms of depression are closely linked to the sleep disorder, fatigue and lack of energy. (Lerdal, 2011; Phillips et al., 2019)

Fatigue experienced by breast cancer patients undergoing chemotherapy

Based on the results of this study, it showed that there were 11 respondents (36,7%) experienced severe fatigue. Fatigue is often caused by anemia, and the side effects of chemotherapy which lead to an excessive nausea. The symptoms of fatigue include feeling of weak, exhaustion, pain, depression, difficulty to climb up the stairs, difficulty to walk short distance and do simple daily life tasks. (Fata, 2015) The fatigue experienced by most of the cancer patients undergoing chemotherapy can lead to the decrease of their quality of life. Besides, the high level of fatigue of breast cancer patients is related to the decrease of activities and various psychological problems.(Retnaningsih et al., 2021).

Fatigue is defined as the lack of energy, drowsiness, exhaustion, inability to get some rest. Fatigue occurs when the physical and psychological resource of a person is unfulfilled. Fatigue is a complex multidimensional process which is difficult to be cured. Several identified causes of fatigue include lack of rest, poor exercise habit, improper diet, psychological pressure (anxiety and depression), side effects of antiretroviral drugs, sleep disturbance, fever, anemia and low CD4 count. Fatigue is associated with the problems regarding to job, social activity and daily life. (Phillips et al., 2019).

Correlation of Depression and Fatigue of Breast Cancer Patients undergoing Chemotherapy

Based on the results of the analysis on the relationship between depression and fatigue, I showed there were 9 respondents (30,0%) experienced severe depression with *p value* 0,000 and the correlation coefficient value 0,671 indicating that the degree of correlation is strong. Based on the results of the study, the severe depression and fatigue is caused by the feeling of over-reaction, lack of confidence, loss of appetite, feeling of worthlessness, excessive anxiety and uncontrolled emotions. On the other hand, respondents who did not experience depression and fatigue are most likely able to accept their condition, respect their self-worth, and able to control their emotion.

There is a strong correlation between depression and fatigue of breast cancer patients undergoing chemotherapy. Depression is psychological condition characterized by the feeling of guilt, lack of interest in doing any activities and withdrawal. (Fitrianda, 2013) The amount of psychological pressure caused by cancer and the treatment leads to the instability of the emotion and stress. This mechanism triggers or exacerbates the fatigue condition. (Dwi Retnaningsih; Istiana; Arifianto., 2021; Fata, 2015) Cancer patients are kept up to date on COVID-19 cases at health care centers and encourage patients to continue treatment by informing them of the unintended consequences of discontinuing treatment. Communication and psychological support from the family and health workers is the prominent thing in cancer treatment. Communication plays an important role in palliative care. The problems regarding communication such as language and cultural barriers and lack of communicational approach by health workers should be explored in depth in order to improve the quality of life of cancer survivors. (Rossi et al., 2020a)

Chemotherapy Measures during COVID-19 pandemic

People are advised to stay at home and practice self-isolation to prevent the transmission of virus (Dong & Bouey, 2020; Rossi et al., 2020a). Contact isolation is a precaution to control the transmission of the infectious disease (Niud & Xu, 2020). The psychological impacts of COVID-19 and self-isolation seriously influence public health particularly mental health (Xiang et al., 2020). The impact of the epidemic at the individual level include the anxiety, panic, depression, psychosocial and trauma-related disorder (Brooks et al., 2020; Rossi et al.,

2020b). It can also result in the high level of stress (DiGiovanni et al., 2004), depression (Hawryluck et al., 2004), irritability and insomnia (Lee et al., 2005), acute stress (Lee et al., 2005) and trauma for the health workers. (Lai et al., 2020).

Telemedicine provides an important benefit to protect cancer patients from the immunosuppressed caused by the infectious COVID-19. (Elkaddoum et al., 2020) In the first case of COVID-19 in Turkey, the patients were interviewed at oncology center using telemedicine. Examination and treatment response were evaluated during the video call. The cancer patients were asked if they had any symptoms of COVID-19. It was conducted to ensure the early diagnosis of possible COVID-19 infection and to reduce the risk of transmission among the patients in the chemotherapy unit. Cancer patients were informed about the update of the COVID-19 cases and encouraged them to continue the treatment by informing about the unwanted consequence from treatment discontinuation. The interview using telemedicine showed a positive result, particularly regarding to a delay in chemotherapy. The rate of delay in chemotherapy decreased after the application of telemedicine was initiated. However, it is not advisable to associate the use of telemedicine with the decrease of the rate of delay in chemotherapy in the context of COVID-19 only.(Karacin et al., 2020)

CONCLUSION

The analysis on the correlation of depression and fatigue obtained *p value* of 0,000 with a strong correlation of 0,671 indicating that the correlation of depression and fatigue of breast cancer patients affects the adherence of the patients to undergo chemotherapy. The higher the level of depression is, the more severe the level of fatigue is experienced by the patients.

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