

How to Cite:

Sari, D. P., Rahayu, D. A., Nurhidayati, T., Hidayati, E., & Mubin, M. F. (2022). Body image disorders based on cancer types. *International Journal of Health Sciences*, 6(S3), 2079–2093. <https://doi.org/10.53730/ijhs.v6nS3.5954>

Body image disorders based on cancer types

Dian Permata Sari

Department of Nursing, Faculty of Nursing and Health Sciences, Universitas Muhammadiyah Semarang, Indonesia

Desi Ariyana Rahayu

Department of Nursing, Faculty of Nursing and Health Sciences, Universitas Muhammadiyah Semarang, Indonesia

Tri Nurhidayati

Department of Nursing, Faculty of Nursing and Health Sciences, Universitas Muhammadiyah Semarang, Indonesia

Eni Hidayati

Department of Nursing, Faculty of Nursing and Health Sciences, Universitas Muhammadiyah Semarang, Indonesia

Mohammad Fatkhul Mubin

Department of Nursing, Faculty of Nursing and Health Sciences, Universitas Muhammadiyah Semarang, Indonesia

Abstract---Body image is one of the problems can arise in cancer patients undergoing chemotherapy. Chemotherapy has side effects such as hair loss, wrinkled skin, fatigue, bleeding gums, nausea and vomiting and other physical symptoms that can interfere with daily activities. Perception about body image on each type of cancer will be different, therefore this study aimed to describe the body image of cancer patients undergoing chemotherapy. This study was a quantitative descriptive study. The variable was body image of cancer patients. The sampling technique used purposive sampling with a total of 131 samples consisting of patients with colon cancer, ovarian cancer, leukemia, breast cancer and cervical cancer. Body image has been measured by “Behavioral and Psychological Factors Predicting Body Satisfaction” which contained 20 body image statement items. The research was conducted in September 2021-January 2022 at Dr. Kariadi General Hospital Semarang. Data analysis was carried out using frequency distribution and cross tabs with the results of a negative body image of 49.6% of cancer patients and a positive body image of 50.4% of cancer patients. The most negative body images were cervical cancer patients with 61.5%, breast cancer 55.5%,

leukemia 42.8%, ovarian cancer 44% and colon cancer 38.8%. Body image in cancer patients varies and is influenced by several factors including self-acceptance and social support. Providing support can increase self-acceptance of the body image of cancer patients so that the quality of life will increase.

Keywords---body image, cancer, chemotherapy.

Introduction

Cancer is the most common cause of death other than heart disease and hypertension. Cancer cases in Asia there are 8,751,000 cases, which is the highest in the world with a growth prevalence of 2.094 million new cases and 1.8 million deaths in lung cancer, then followed by breast cancer 11.6%, colorectal 10.2% and stomach 5.7% In Indonesia the incidence of cancer also increased by 1.49% in 2019.(1) Cancer has significantly different relapse times. This difference in relapse time becomes an assumption to determine the survival of cancer patients. Most studies have explained that psychosocial factors determine the outcome of clinical evaluation of cancer. These studies mention that depression, anxiety, unhealthy coping and most prominently is poor body image. (2)

Body image is a picture of a person's self or conscious and subconscious attitude towards one's own body both present and past as well as feelings about size, function, shape/ appearance, and potential(3). People with a bad self-image will perceive themselves as people who do not have attractive or bad appearances, while people who have a good self-image will be able to see that they are attractive to themselves or others, or at least will accept themselves for who they are.(4) For a person's appearance is very important, the good appearance of a person will affect the image of himself, especially women. Women become very sensitive when there is a change in her. Study shows the presence of body image disorders in cervical cancer patients. Other similar studies also show the same thing that cancer patients experience body image disorders post-chemotherapy including people with leukemia, prostate cancer and thyroid cancer. Research shows that changes in the body image of breast cancer patients have a significant impact on anxiety and depression(3)(5)(6)(7). Other studies also mention the presence of changes in body image in breast cancer patients have an impact on depression and not confidence when meeting with people around them. The research was also supported by research that mentioned the negative picture in breast cancer patients (8)(2,9).

The impact of changes in body image if left unchecked will be not good because it will interfere with daily activities and socialization with the community in breast cancer patients with physical changes. The importance of support from family, relatives and fellow cancer survivors will especially increase self-acceptance in cancer patients. Research shows the influence of social support on self-acceptance of *body image* in breast cancer patients. Such social support can vary in the form of emotional, instrumental, informational and reward support.(8)(10) Dr. Kariadi General Hospital Semarang is one of the referral hospitals in Indonesia which is an integrated cancer center in the Cassowary Installation. A

preliminary study conducted in July 2021 said 10 patients with stage 2 and 3 (30%) cancers included breast cancer, 2 (20%) blood cancer (leukemia) and cervical cancer 5 (50%). Preliminary studies showed that 5 (50%) said they had decreased self-confidence, 2 (20%) felt fear and hopelessness and 6 (60%) felt ashamed of their physical condition changing after the first chemotherapy. All respondents expressed embarrassment to socialize and more withdrawn towards their respective partners. Based on the background above, researchers will explore more deeply about the body image of cancer patients based on their type at Dr. Kariadi General Hospital Semarang.

Method

The type of research used is quantitative descriptive research with variable body image of cancer patients. In this study, the population is cancer patients with types of colon cancer, ovarian cancer, leukemia, breast cancer and cervical cancer at the Cassowary Installation of Dr. Kariadi General Hospital Semarang. The data retrieval technique used in this study was *purposive sampling* with a total of 131 respondents. The inclusion criteria in this study are; (1) Willing to be a respondent; (2) Negative covid-19 indicated by hospital screening results (minimum *Rapid Antigen*); (3) The patient has undergone cancer therapy (chemotherapy/surgery/ray); (4) The patient is fully conscious; (5) The number of patients from all five types of cancer is taken from the lowest number of cancers as a reference for the number of samples to the other four cancer patients. This research was conducted at the Cassowary Installation of Dr. Kariadi General Hospital Semarang. The measuring tool for assessing body image using *Behavioral and Psychological Factors Predicting Body Satisfaction* contains 20 items of *favourable* and *unfavourable* statements that use the likert scale as a score. This study was conducted on December 22, 2021 – January 23, 2022. Data is analyzed univariately using frequency distributions. This study has an ethical permit with an *ethical clearance* number: 986/EC/KEPK-RSDK/2021.

Result

Table 1
Age Characteristics of Cancer Patients in Cassowary Installation of Dr. Kariadi General Hospital Semarang (n=131)

Characteristic	f	Percentage (%)	Min	Max	Mean	SD
Age						
20 - 25 Years	2	1,5				
26 - 35 Years	9	6,9	24	61	44,46	7,77
36 - 45 Years	60	45,8				0
46 - 55 Years	49	37,4				
56 - 65 Years	11	8,4				
Total	131	100.0				

Based on the average age of respondents aged 44.6 years with a standard deviation of 7,770.

Table 2
Characteristics of Gender, Education, Occupation, Marital Status and Cancer Type in Cancer Patients at the Cassowary Installation of Dr. Kariadi General Hospital Semarang (n=131)

Characteristic	f	Percentage (%)
Gender		
Woman	99	75,6
Man	32	24,2
Education		
SD	28	21,4
SMP	17	13,0
SMA	58	44,3
DIII/Equivalent	10	7,6
S1	18	13,7
Work		
Unemployment	63	48,1
Private	38	29,0
Entrepreneurial	19	14,5
Civil Servants	11	8,4
Status		
Marry	124	94,7
Unmarried	7	5,3
Types of Cancer		
Cancer Colon	25	19,1
Ovarian Cancer	25	19,1
Leukemia	28	21,4
Breast Cancer	27	20,6
Cervical Cancer	26	19,8
Total	131	100.0

Characteristics showed that the majority of respondents were female 75.6%, high school educated 44.3%, working as an unemployment 48.1%, married 94.7% and suffering from leukemia 21.4%.

Table 3
Distribution of Frequency of Body Image of Cancer Patients in Cassowary Installation of Dr. Kariadi General Hospital Semarang (n=131)

Body Image	f	%	Min	Max	Mean	Median	SD
Positive	66	50,4	46	74	57,36	58,00	4,621
e	65	49,6					

Body Image	f	%	Min	Max	Mean	Median	SD
Negative							
Total	131	100					

The frequency distribution showed respondents experienced negative body image as much as 49.6% and positive body image 50.4% with a lowest score of 46, a highest score of 74, an average score of 57.36, a median of 58.00 with a standard deviation of 5,467 which means the average has a negative body image.

Table 4
Cross Tab Types of Cancer and Body Image of Cancer Patients in the Cassowary Installation of Dr. Kariadi General Hospital Semarang (n=131)

Types of Cancer	Characteristic	Body Image		Total
		Negative	Positive	
Colon Cancer	Age			
	20-25 Years	1	-	1
	36-45 Years	4	8	12
	46-55 Years	5	6	11
	56-65 Years	1	-	1
	Gender			
	Male	11	10	21
	Female	-	4	4
	Education			
	Elementary school	1	-	1
	Junior high	3	1	4
	High school	2	11	13
	Diploma/Bachelor	3	1	4
		2	1	3
	Work			
	Unemployment	-	4	4
	Private	7	8	15
	Entrepreneur	3	2	5
	Civil servants	1	-	1
	Marital Status			
Marry	10	14	24	
Unmarried	1	0	1	
	Total	11	14	25
Ovarian Cancer	Age			
	26-35 Years	-	2	2
	36-45 Years	5	2	7
	46-55 Years	4	9	13
	56-65 Years	2	1	3
	Gender			
Male	-	-	-	

Types of Cancer	Characteristic	Body Image		Total
		Negative	Positive	
	Female	11	14	25
	Education			
	Elementary school	4	6	10
	Junior high	1	-	1
	High school	4	7	11
	Diploma/Bachelor	-	-	-
		2	1	3
	Work			
	Unemployment	4	8	12
	Private	4	4	8
	Entrepreneur	1	1	3
	Civil servants	2	-	2
	Marital Status			
	Marry	11	12	23
	Unmarried	-	2	2
	Total	11	14	25
Leukemia	Age			
	20-25 Years	1	-	1
	26-35	2	1	3
	36-45 Years	6	7	13
	46-55 Years	2	7	9
	56-65 Years	1	1	2
	Gender			
	Male	2	9	11
	Female	10	7	17
	Education			
	Elementary school	1	-	1
	Junior high	1	-	1
	High school	5	10	13
	Diploma/Bachelor	1	2	3
		4	4	8
	Work			
	Unemployment	3	3	6
	Private	4	7	11
	Entrepreneur	2	4	6
	Civil servants	3	2	5
	Marital Status			
	Marry	9	15	24
	Unmarried	3	1	4
	Total	12	16	28
Breast Cancer	Age			
	26-35 Years	1	1	2
	36-45 Years	8	9	17
	46-55 Years	4	2	6
	56-65 Years	2	-	2
	Gender			
	Male	-	-	-

Types of Cancer	Characteristic	Body Image		Total
		Negative	Positive	
	Female	15	12	27
	Education			
	Elementary school	3	4	7
	Junior high	3	1	4
	High school	6	6	12
	Diploma/Bachelor	-	1	1
		3	-	3
	Work			
	Unemployment	10	11	21
	Private	1	1	2
	Entrepreneur	2	-	2
	Civil servants	2	-	2
	Marital Status			
	Marry	15	12	27
	Unmarried	-	-	-
	Total	15	12	27
Cervical Cancer	Age			
	26-35 Years	1	1	2
	36-45 Years	8	3	11
	46-55 Years	5	5	10
	56-65 Years	2	1	3
	Gender			
	Male	-	-	-
	Female	16	10	36
	Education			
	Elementary school	3	6	9
	Junior high	6	1	7
	High school	5	2	7
	Diploma/Bachelor	1	1	2
		1	-	1
	Work			
	Unemployment	13	7	17
	Private	-	2	9
	Entrepreneur	2	1	5
	Civil servants	1	-	1
	Marital Status			
	Marry	16	10	26
	Unmarried	-	-	-
Total		16	10	26

Cross-tabulation showed the most negative body image in cervical cancer, namely as many as 16 respondents the majority at the age of 36-45 years with negative body image, married status, the majority of education is high school and as an unemployment. Breast cancer that has a negative body image ranks second most and occurs in 11 respondents aged the majority are 36-45 years and there are respondents aged 26-35 years. Respondents with leukemia had a negative body

image of 12 respondents with the majority aged 36-45 years, with high school education, the majority of women and private workers. Colon cancer has a negative body image as many as 11 respondents with an age range of 46-55 years, the majority are married with a high school education, the majority of men, with private jobs. Ovarian cancer that experienced negative body image as many as 11 respondents and mayoriras at the age of 36-45 years. The majority of respondents occupation were housewives and the majority of education was high school and elementary school.

Discussion

The characteristics of this study are divided into numerical and categorical data. Numerical data on characteristics are age, while categorical data are gender, education, occupation, marital status and cancer type. The average age in the study was 44.46 years with the youngest age being 24 years old and the oldest age being 61 years with a standard deviation of 7.70. The most age is in the age range of 36-45 years as much as 45.8% and the age range of 46-55 years with a total of 37.4%. The results are in accordance with research that mentions the average age of cancer patients is 30-60 years old. Other studies have also mentioned the relationship of age and activity with the type of cancer performed chemotherapy. The study was also supported by research related to the relationship of age to the degree of cancer deferinization which states there is no meaningful relationship related to the degree of cancer diferenzation with age. This is in accordance with the theory that the older a person's age, the level of immunity also decreases, when immunity begins to decline then it is easy for the cancer to develop in the body, age is also influenced by the lifestyle of cancer patients as before getting cancer lifestyle applied unhealthy can be due to an unhealthy diet, the burden of work so that it can be stressful, coupled with men who smoke and women who are exposed to cigarette smoke can cause new cancer to be detected when stepping on in old age. (11,12)(13)(14)(13)

The highest sexes in the study were women with 75.6% and men with 24.2%. This is in accordance with the 2018 Indonesian basic health research data which shows an increase in cancer rates in the female sex compared to men. This is also in accordance with the theory that women are more vulnerable and at risk of cancer than men. This is because of a less healthy lifestyle such as smoking, consuming excessive fatty foods in most women, especially women are the number 2 people in the family so that most women cannot control their health so that they have the potential to get cancer, this is also caused by menstruation for the first time at an early age, menopause at an advanced age, long exposure to hormones, not breastfeeding, radiation, consumption of alcoholic beverages .(15)(13)

The education of cancer patients in this study was the most high school as much as 44.3%, elementary school as much as 21.4% and S1 13.7%. The results are in accordance with research that mentions the relationship between education levels and cancer incidence. Other studies also mention that someone who is middle educated has enough knowledge about breast examination to detect cancer as well as higher education, the knowledge and awareness to check breast cancer themselves will be higher. In this study there is still cancer in Diploma and

Bachelor degree education it is in accordance with the theory that although it has higher education, if it does not have a healthy lifestyle it can be a risk of cancer.(16)(17)(16)

Occupation and marital status in this study were on average housewives as much as 48.1%, private 29.0% and 94.7% married status. Marital and occupational status describe the pattern of daily life. A person with a decent income job if they do not have a good lifestyle will tend to have a bad lifestyle, but it does not rule out the possibility that even those who do not have a job can have a high risk as well. The data mentioned as many as 4.10 (highest data) cancer incidence experienced by civil servants and the second highest there are unemployment as much as 3.48% including housewives in it. Research also mentions the incidence of cancer related to marital status in cervical cancer patients. The study was supported by other studies that mentioned the age of marriage is associated with the incidence of breast cancer.(15)(18)(19)

The most common types of cancer in this study were leukemia, breast cancer in the second position and cervical cancer in the 3rd position. These results are different from the burden of cancer at Dharmais Hospital in 2018 which mentioned breast cancer in the first position with 19.18% and cervical cancer 10.69% and leukemia as much as 4.44%. Central Java profile data also mentions that the highest cancers in Central Java are breast cancer and cervical cancer. This type of cancer in this study was carried out by sampling conducted by(15)(20) *purposive sampling* with a target of 125 respondents but in the last 1 month the number of patients who did chemotherapy was 131 patients. So that the difference is still included as additional data with the justification of this research is descriptive research that does not require data analysis to find its significance. The different the data in descriptive research, the better the target image produced.(21)

The body image of cancer patients in this study in general as many as 50.4% of patients have a positive body image and 49.6% experience negative body image. The results are in accordance with research that mentions cancer performed chemotherapy affects the image of the patient's body image. The study was also supported by other studies that revealed the same thing that the body image of cancer patients is affected by changes in body shape after chemotherapy. This is supported by the theory that the process of loss not only applies to the condition of grieving but also applies to those who experience changes in body shape and it is undesirable.(22)(23)(24)

The negative body image picture in this study was shown by the distribution of 7.6% strongly agreed and agreed 54.2% said minder with his current body shape, as many as 7.6% strongly agreed and 87.8% agreed to express shame about the condition of his body, as many as 11.5% strongly agreed and 83.2% agreed to express disappointment with his body shape after chemotherapy, 90.1% expressed envy of seeing other people's body shapes, 3.1% strongly agreed and 85.5% agreed that others like to compare the body now with in the past before chemotherapy, 10.7% strongly agreed and 81.7% agreed to say *down*, 0.8 strongly agreed and 64.1 agreed after experiencing changes in the body of people away from it. This is if you look at two factors that cause a negative body image picture,

namely internal factors from within the patient and external factors, namely the environment. Research mentions factors that affect the patient's body image other than within the patient himself is also obtained from the patient's environment. The theory also suggests that strong dislike of appearance can be caused due to the impact of physical changes in a disease. Studies that indicate physical changes when exposed to a disease such as cancer have a direct effect on body perception, eating disorders and psychological health.(7)(24)

The positive body image picture in this study was contributed from the distribution of respondents as many as 87.8% received social support, 93.9% felt able to do activities as usual, 96.9% believed that change of form was a test form from God to test humility and how to be grateful and 94.7% agreed that no human being was created perfectly. This is supported by research that mentions the presence of good coping and good anger management will increase acceptance of body image. Other studies also mention the existence of social support will improve positive body image in cancer patients who experience changes in physical form after chemotherapy. The social support provided will have an impact(25)(7) on emotional support and will certainly make cancer patients feel protected, cared for and foster high life expectancy. The theory also states that social support will improve the emotional quality of the individual with other individuals so that it will foster a positive impact for both.(26)

Negative body image is most prevalent in cervical cancer, namely as many as 16 respondents, the majority of respondents at the age of 36-45 years with negative body image, married status, the majority of education is high school and as an unemployment. Cervical cancer in theory has an impact in the form of vaginal discharge, unpleasant odor and bleeding. This of course for women of productive age will be very disturbing especially in the needs of exercise activities, social needs and sexual needs. Research mentions moderate to severe anxiety in cervical cancer patients and some even get to the stage of depression(27-29) . This is certainly not good for sufferers because it will affect the quality of life. Good social support will be able to minimize the psychological impact that occurs in people with cancer, therefore family and close relatives and health workers must really pay attention from bio, psycho, social and cultural aspects so that the degree of health and quality of life of patients will be maintained.(26)(22,30-32)

Breast cancer that has a negative body image ranks second most and occurs in 15 respondents aged the majority are 36-45 years and there are respondents aged 26-35 years. All were married, the majority were high school educated and worked as housewives. The results of this study if only seen from the physical changes that occur, breast cancer is the cancer that has the most visible shape change compared to other types of cancer, coupled with the majority of breast cancer is female and the impact of chemotherapy given so that it has the most potential with the occurrence of negative body image, but in this study is the extent that breast cancer has the second most negative body image after cervical cancer. Of course, the results of this study are different from studies that show that body image in breast cancer patients has a high negative body image. Other studies that differ from this study also mention the presence of high negative body image in cervical cancer patients. Nursing care in colon cancer patients, cancer ca mamea mentions the diagnosis of body image disorders can be

overcome by the presence of(7,22,25)(33) emotional support(34,35) . This is in accordance with research related to partner support for cancer patients which shows results that emotional support such as spirit, instrumental such as financial assistance, appreciation in the form of supporting treatment and information in the form of providing supportive readings will be very helpful in improving the psychological quality of cancer patients.(36)

Respondents with leukemia had a negative body image of 12 respondents with the majority aged 36-45 years, with high school education, the majority of women and private workers. Analysis from leukemia cancer respondents said some still could not accept the change in shape, as well as the lack of social support , especially respondents aged 20-45 years which is a productive period. This is different from research that states that people with leukemia have a good body image and neutral, no one has a negative body image. Another study that supports this study is the result that mentions that body image in leukemia patients occurs during the 2nd and subsequent chemotherapy cycles, when the skin begins to dry out, hair loss and frequent thrushes occur.(37)(38)

Colon cancer has a negative body image as many as 11 respondents with an age range of 46-55 years, the majority are married with a high school education, the majority of men, with private jobs. When taking the data, five people admitted that colonostomy had been done and it made the patient down because he could not defecate as usual. Colonostomy occurs in the age range of 36-45 years and the action is still less than 6 months. Research suggests changes in body shape in cancer patients cause impaired body image. Changes in body shape in theory are indeed one of the factors that cause negative perception of body image. (2,8,23,25,39,40)(33)

Ovarian cancer occurred negative body image as many as 11 respondents and majorities at the age of 36-45 years. The majority of respondents' occupation were housewives and the majority of education was high school and elementary school. Ovarian cancer comes second with a negative body image, as we know the ovaries play a role in the formation of eggs that will play a role in the female reproductive system. When this function is disrupted, there will be body image disorders. Research shows the presence of anxiety in ovarian cancer (35,41,42). Back to the theory that when a person experiences a negative impact in his body, the brain will respond and make it one of the factors that cause body image disorders.(23,43)

The results of the analysis also mentioned that patients with breast cancer, leukemia, cervical cancer received good support from the environment, not shunned and not compared with the condition of the body in the past. Social support plays a very good role in these cancer patients. Basically, social support will have a good influence on the mental health system. Social support has elements of emotional, financial, reward and informational support. The four elements are certainly very important aspects that will increase the coping power externally. Research shows the influence and relationship of social support to anxiety. The better the support provided, the lower the level of anxiety.(10,31,44)

Body image is basically an individual's conscious or unconscious attitude, perception, beliefs, and knowledge towards his or her body, be it size, shape, structure, function, limitations, or objects that are in continuous contact at this time and in the future. Body image is subjective, which is different from individual to individual. Coping can be viewed as a trauma between people and the environment.

Body image in the study as a whole already describes the overall assessment of assimilation, comparisons with others, reactions of others and components of attitudes towards body image. The existence of a positive body image due to the statements of other people's reactions (support and not comparing) received is good, able to be grateful and accepting while negative body image is a contribution to the distribution of assessment of low overall appearance, the presence of people who compare and lack of social support. Social support is a major important component in strengthening the quality of self-acceptance of cancer patients and for achieving a good quality of life. (7,26)

Conclusions

The average cancer patient was 44.6 years old, the majority were female (75.6%), high school educated (44.3%), housewives (48.1%), married (94.7%) with colon cancer (19.1%), ovarian cancer (19.1%), leukemia (21.4%), breast cancer (20.6%) and cervical cancer (19.8%) with negative body thoughts (49.6%) and positive body image (50.4%).

Acknowledgment

Our thanks to the respondents who are willing to take part in the study and Dr. Kariadi General Hospital Semarang committee who are willing to give permission for the hospital to be the place of the study.

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