Body image and the level of stress in cervical cancer patients

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ABSTRACT

Introduction: Chemotherapy is one of the management applied to cervical cancer patients. Chemotherapy is beneficial to kill cancer cells, but it affects normal body cells, such as hair roots, skin, and changes in physical appearance. These physical changes result in poor self-assessment and stress. This study was conducted to describe the correlation between body image and stress level of cervical cancer patients undergoing chemotherapy at the Gynecology Polyclinic, Dr. Kariadi General Hospital Medical Center Semarang.

Methods: This type of research is quantitative using a correlational research design. The research process was carried out in 2020 at Dr. Kariadi General Hospital Medical Center Semarang with the number of samples obtained was 87 respondents.

Results: It showed that there was a relationship between body image and stress levels in cervical cancer patients receiving chemotherapy (r = -0.313 and p-value = 0.003). With a change in physical appearance, patients would feel something different which affects psychological situations and further causes stress.

Conclusions: The level of stress has a significant correlation with the body image score of cervical cancer.

INTRODUCTION

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Cervical cancer is the fourth most common cancer in women. It was estimated that approximately 570,000 women were diagnosed with cervical cancer in 2019, which was 6.6% of all cancers in women. Approximately 90% of the death rate is found in low and middle-income countries.[1] In Indonesia in 2019, there was 136.2/100,000 population, and it was in the eighth place among Southeast Asia countries, while in Asia, it was in 23rd position. Based on the province's data about cervical cancer early detection by using VIA from 2015 to 2016, it was found that the cervical cancer data significantly increased. It was 364 234 people in 2015, 657 610 people in 2016, and 1,114,173 people in 2017.[2] In 2017, the highest level of cervical cancer early detection scope was in women between 30 – 50 years old. The data collected at the Gynecology Centers of Dr. Kariadi General Hospital Medical Centre from May to July 2018 found a quite significant increase of cervical cancer patients which number 436 in May, 576 in June, and 628 in July.

Cancer is a multiorgan and complex disease that may affect patients' confidence and their quality of life.[3] A type of chemotherapy, concurrent chemoradiation (CCRT) (with cisplatin alone or in combination), is currently the standard treatment approach for cervical cancer.[4] There are several changes that can be found in the physical appearance of a patient during its treatment process. Cytotoxic chemotherapies, molecularly targeted therapies, immunotherapies, and radiotherapy may lead to hair disorders, including alopecia, hirsutism, hypertrichosis, and pigmentary and textural hair changes.[5] An alopecia patch confined to the area of radiotherapy is usually observed 1-3 weeks after the first irradiation.[6] Most patients with cancer had experienced symptoms of eating disorders that lead to malnutrition, fatigue, and skin alteration.[7]

Advanced-stage cancer may put patients under heavy stress, as some changes, especially physical changes, may affect the body image of the patient.[8] Most of patients experienced Alopecia areata[9], nausea and vomiting[9,10], weight loss[12], muscle weakness[13], color changes in skin and nails. Eating disorders may cause a negative impact, including on the patient's body image, their psychological, and physical aspects. Moreover, it was explained that certain women are still active and others currently need support to face the changes in their lifestyle, such as

nutrition, and fatigue.[14]

According to the previous study, it was found that there was a high prevalence among the decedents. It was found that the decedents feel moderate or severe pain (84%), vaginal discharge (66%), vaginal bleeding (61%), and loss of faith (31%). In addition, there is a high prevalence of clinically significant anxiety (63% and 50%, respectively), depressed mood (52% and 38%, respectively), and sexual dysfunction (87% and 83%, respectively) that can be found among decedents and non-decedents. Most patients may feel some combination of moderate or severe physical, psychological, social, and spiritual suffering.[15] he prevalence of depression and anxiety was 52.2% and 65.6% in cervical cancer patients.[16] The research aimed to find out the correlation between body images and stress levels in cervical cancer patients who receive chemotherapy at the Gynecology Centers of Dr. Kariadi General Hospital Medical Centre Semarang.

METHODS

Study Design
This research is quantitative with a correlative research design. The research process was carried out in 2020 at Dr. Kariadi General Hospital Medical Centre in Semarang City, Indonesia, as a referral hospital for patients with cervical cancer.

Data Collection
The sampling technique used was total sampling based on inclusion criteria married, aged more than 20 to 70 years, cervical stage two to 4, and Javanese ethnicity. While the exclusion criteria were patients who did not can communicate. The sample is 87 people.

Statistical Analysis
The data collection tool uses a questionnaire body image and Depression Anxiety Stress Scale (DASS). The result of Body image is categorized as good (mean ≥) and poor (mean <23) while DASS is categorized as normal (0-14), mild (15-18), moderate (19-25), severe (26-33) and extreme severe (≥ 34). Body image questionnaire is valid (0,353-0,754) and reliable (Cronbach's alpha 0.483). Patients were given informed consent before filling

in the data. The collected data was then analyzed using analysis Spearman's rho test.

RESULTS

Respondents who have been diagnosed with cervical cancer for at least one month to 24 months, show an average of 24 months (SD 29.2) All respondents are married (100%), and more than half of the respondents graduated from elementary school (50.6%) and unemployed (58.6%), and only a few respondents have a family history of cervical cancer (3.4%). More than a quarter of respondents have done chemotherapy cycle III (35.6%) while most of the respondents were diagnosed with stage III cancer (87.4 %).

Table 1 shows that most categorize body image was good, and the rest was poor body image.

Table 2 shows the highest level stress was moderate (43.7%) and the lowest was extreme level (2.3%).

Table 3 showed the mean score of body image score was 23.87 (good) with the highest score was 36 (good) and the lowest score was 15 (poor). The mean score of stress level was 19.20 (moderate), with the highest was 39 (severe) and the lowest score was 4 (normal).

Table 4 shows that p value score between body images and stress levels is 0.003.

Figure 1 shows the negative linear correlation pattern between body images and stress level variables. It means the better body images, the lower the stress level of the cervical cancer patients who receive chemotherapy in the Gynecology Centers of Dr. Kariadi General Hospital Medical Center Semarang, and vice versa. The worse the body images, the higher the stress level of cervical cancer patients who receive chemotherapy in the Gynecology Centers of Dr. Kariadi General Hospital Medical Center Semarang.

The determinant coefficient of 0.104 means body images significantly affect the

stress level at 10.4%. Meanwhile, the rest, 89.6%, is affected by other factors.

DISCUSSION

The resulting age of the respondent is considered as middle-aged-adult close to old aged-adult. Older people are at a higher risk of cancer. The older, the higher probability of the combination and mutation stacking within the cell nucleus associated with cell abnormality which leads to cancer. Older age also enables more DNA mutation in the nucleus, and it is unavoidable. The risk of cancer is increased by the regulating genes mutation, which controls, inhibits, or stimulates cell division.[17]

The research found most patients (43.7%) experienced moderate stress (mean of 19.20). Most cervical cancer patients who received chemotherapy suffered stress, anxiety[18,19], hope[20], and fear of death as the side effect of the treatment process. These psychological distress

Table 1. Body image of cervical cancer patients who receive chemotherapy in Gynecology Centers of Dr. Kariadi General Hospital Medical Center Semarang 2020 (n=87).

Variable	n	%
Good	56	64.4
Poor	31	35.6

Table 2. Stress Level of cervical cancer patients who receive chemotherapy in Gynecology Centers of Dr. Kariadi General Hospital Medical Center Semarang 2020 (n=87).

Variable	n	%
Normal	15	17.2
Mild	26	29.2
Moderate	38	43.7
Severe	6	6.9
Extreme Severe	2	2.3

Table 3. Mean Score Body image and Stress Level of cervical cancer patients who receive chemotherapy in Gynecology Centers of Dr. Kariadi General Hospital Medical Center Semarang 2020 (n=87).

Variable	Min	Max	Mean	Median	SD
Body image	15	36	23.87	23	3.37
Stress Level	4	39	19.20	19	5.36

index of patients was negatively correlated with the level of hope.[20] Therefore, cervical cancer patients mostly show signs of psychological and physical side effects during the treatment process.[18,20,21] There such as biological, and physical are some factors related to stress level, psychological, and social factors.[20] Some changes which are associated as main stressors are retirement, degradation or loss of physical ability, financial problem, losing family, the feeling or consciousness of death.[22]

Respondents from this research are dominated by elementary school graduates, which means this level of education has a higher probability of

Table 4. The correlation between body images and stress level of cervical cancer patients who receive chemotherapy in Gynecology Centers of Dr. Kariadi General Hospital Medical Center Semarang 2 - 30 March 2020 (n=87).

Variable	Stress Level		
	N	r	P-value
Body image	87	-0.313	0.003

living unhealthy life compared to those who graduated from a higher education level. The risk factors of cervical cancer in low-educated women were fourth times higher compared to highly educated women.[23] Education level influenced people's perception toward themselves, their surroundings, and their behavior to cope with their disease. One of the most stress-affecting factors is education level, as the education level influences someone's perception.[21] Therefore, the behavior or perception to cope with the problem of highly educated patients is different from that of low-educated patients.

Almost patients are unemployed patients, which is significantly related to stress caused by the family's poor economic factors.[24] They said worries about the cost of the treatment, despite their status as unemployed. Moreover, the long chemotherapy process could not instantly heal the disease but worsened the condition effects of the treatment. Social-economic status is correlated to people's stress levels. It is caused by the expenses for children's education, healthcare, and maintaining the social status of the family member.[25] In addition, low-class

patients had higher levels of depressive and anxiety symptoms, cancer-related distress, and perceived stress compared to the moderate-class patients, who, in turn, reported higher levels of these symptoms compared with those in the high class.[26]

The experience of chemo procedure mostly in third cycles may become the reason level moderate stress the face, meanwhile, patients who have done more than four cycles of chemotherapy experience severe stress. Cancer stage and period also increase the risk of stress on cancer patients caused by the long-term treatment and also the fear of death, the inability to reach life's plan, self-esteem, the changes in social role and lifestyle, some other financial problem, and changes in body images.[27] It will cause the increasing sleep time or decrease in sleep problems corresponded with a reduction in self-reported emotional distress and attenuation of pro-inflammatory, Th2, and counter-regulatory cytokines.[28]

The body images are correlated to the stress level of cervical cancer patients who received chemotherapy in the Gynecology Centers of Dr. Kariadi General Hospital Medical Center. Patients' average body image was categorized as good but those with the lowest score thought that the disease, along with the chemotherapy, resulted in worse body condition, hair loss, weakness, fatigue, loss of appetite, and less social contact as the loss of confidence regarding the physical changes.[29,30]

There is a significant correlation between the level of stress and body image, in which the higher stress level was significantly associated with greater body image disturbance, and this relationship was mediated by self-compassion.[31] In reflection the poorer body image was related to physical and psychological distress.[32,33] More than half the patient is young and have married, therefore of Sexuality, intimacy, and body image concerns were found to be associated with younger age and treatment types received by younger women.[32]

Body image or self-confidence was a significant positive relationship with quality of life.[34] Patients with cervical cancer should possess a positive self-concept and life quality to live their lives and cope with any physical changes.
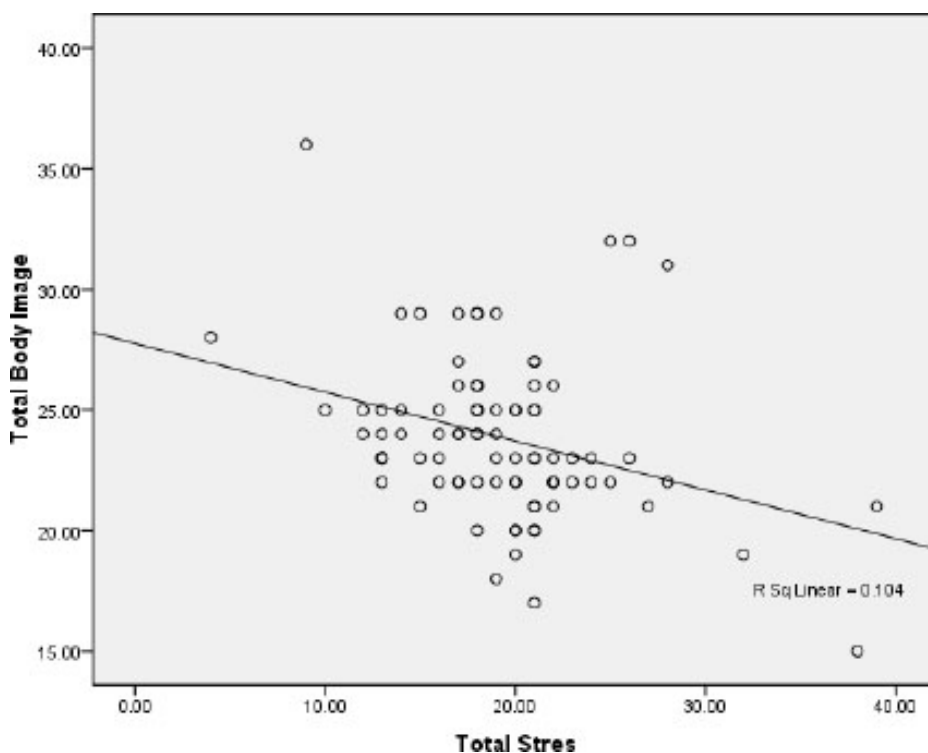

Figure 1. The correlation between body images and stress level of cervical cancer patients who receive chemotherapy in Gynecology Centers of Dr. Kariadi General Hospital Medical Center Semarang 2 - 30 March 2019 (n=87).

They need strong psychological sources and good life quality to enjoy and do their activities well by improving their self-concept. Self-concept is formed by internal experience, the relationship with other people, and interaction with the surrounding. Interaction highly affects people's behavior.[35]

CONCLUSIONS

The level of stress has a significant correlation with the body image score of cervical cancer, and both have grades. From the research nurses and families can increase patient body image by decreasing their level of stress by offering "support group" therapy and stress management for cervical cancer patients to minimize or relieve the stress.

DISCLOSURES

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