Psychosocial Adaptation of Breast Cancer Patients Based on The Roy Adaptation Model

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A B S T R A C T

Breast cancer is the highest type of cancer in the world in 2020. Cancer treatment has side effects that cancer patients at high risk of experiencing difficulties in adapting, both to themselves and psychosocially. There needs to be an approach with an appropriate theory to direct patients to be able to adapt, one of them is the Roy Adaptation Model (RAM) by Callista Roy. The purpose of this study was to analyze adaptive stimuli associated with psychosocial adaptation in breast cancer patients. This research is a correlational method with a cross-sectional approach. The sample used was breast cancer patients who met the inclusion criteria of 58 samples. Samples were taken using a quota sampling. The instrument used was a modified questionnaire from previous studies. Data analysis used chi-square and logistic regression test. The results of this study are that focal, contextual and residual stimuli have a relationship with psychosocial adaptation. Focal stimulus is the dominant adaptive stimulus that influences psychosocial adaptation with an OR of 8.6. Nursing interventions are needed to support the patient's adaptive psychosocial adaptation abilities such as the involvement of clinical psychologists, providing emotional, psychological support to reduce psychosocial impacts.

INTRODUCTION

Cancer is the leading cause of mortality worldwide, accounting for nearly 10 million deaths by 2020 (American Cancer Society, 2021) . Cancer is a disease that causes cells in the body to divide abnormally. The World Health Organization (WHO) states that the number of cases and deaths from cancer until 2018 was 18.1 million cases and 9.6 million deaths in 2018, the data obtained from Data from the Global Burden of Cancer (GLOBOCAN). WHO estimates that cancer deaths will continue to increase to more than 13.1 million by 2030 (Pangribowo, 2019) . Based on data obtained from the WHO, the highest new cancer cases were breast cancer as many as 2.26 million cases in 2020. In the same year, the death rate from breast cancer was 685,000 (WHO, 2022). In 2013 and 2018, Riskesdas data was obtained which showed an increase in the prevalence of cancer in Indonesia from 1.4‰ to 1.49. In 2018 new cases of breast cancer in Indonesia were found as many as 77,969 while in 2019 the number of cases increased to 84,185 cases (Pangribowo, 2019).

The government in Indonesia has made efforts to reduce the incidence of cancer with preventive measures such as screening and through curative efforts such as surgery, radiation and chemotherapy (Pangribowo, 2019) . A series of cancer treatments, apart from being cytotoxic, also has side effects including changes in appearance, loss of sensation, and lymphedema. Side effects of adjuvant therapy (chemotherapy, radiotherapy, hormone therapy) can include hair loss and thinning, weight fluctuations, fatigue, skin and nail discoloration, dermatitis, and exacerbation of menopausal symptoms (Lewis-Smith et al., 2018) . As a result, cancer patients undergoing treatment are prone to having difficulty adapting. Cancer causes patients to face various changes in their lives that cause negative psychology in those who suffer from it, it is necessary to use effective

coping strategies, so that the psychosocial effects produced by this disease can be reduced (Cepeda-Trujillo et al., 2022) . Therefore, there is a need for individual psychological and social adaptation, including psychosocial adaptation to the wider family and environment (Lewis-Smith et al., 2018) .

Psychosocial adaptation is the ability to achieve, maintain, or regain a level of physical or emotional health after a tragedy, trauma, adversity, or stressor. Patients with chronic diseases need to receive holistic nursing care, namely biological, psychological, social and spiritual. These components affect the adaptability of patients caused by the uncertainty of the disease process experienced (Stuart, 2013) . These psychosocial adaptations include social and recreational activities, work and household tasks, psychological stress, relationships with partners and family, health care orientation, sexual relations and assistance from others (Merluzzi, 1997) .

The existence of an approach with the appropriate theory is necessary to direct the patient to be able to adapt adaptively. One of the nursing theories that focuses on adaptation is the theory developed by Callista Roy, known in the Roy Adaptation Model (RAM). Based on this theory, it is explained that individual adaptation is influenced by inputs, processes, and outputs. RAM divides the input into focal stimulus, contextual stimulus and residual stimulus. Focal stimuli are stimuli that occur suddenly and are associated with physiological functions, in breast cancer patients the focal stimulus that occurs is symptomatic distress. Contextual stimulus is the result of a focal stimulus such as a change in self-concept, while the residual stimulus is a stimulus obtained from outside such as support given to breast cancer patients (Alligood, 2014). The purpose of this study was to analyze the adaptation stimulus associated with psychosocial adaptation in patients with breast cancer. In contrast to existing research, this study links the nursing theory of RAM with psychosocial adaptability in breast cancer patients.

METHODS

This research is a quantitative research with a correlational method using a cross-sectional approach. The study was conducted from August 2022 to September 2022 at RS. Baladhika Husada Jember. The population in this study were all breast cancer patients undergoing treatment at the hospital. Baladhika Husada Jember, from January 2022 to May 2022 as many as 209 patients, so the sample used was 58 sampling. The sample was taken using a non-probability sampling approach, namely quota sampling with the inclusion criteria of respondents who were willing to become and fill out informed consent, respondents who had been diagnosed with breast cancer, respondents who received chemotherapy treatment, respondents who were productive aged 15-64 years, respondents had received minimal chemotherapy treatment as much as 4 cycles. The instrument used is a questionnaire modified from The Symptom Distress Scale (SDS) by McCorkle to measure symptoms of distress, The Merlin Breast Cancer Self-Concept Questionnaire to measure self-concept, Perceived Social Support Family Scale to measure family support, and the HCO subscale of the Psychosocial Adjustment to Illness Scale-Self Report (PAIS-SR) to measure psychosocial adaptation. The instrument has been tested for validity and reliability on 30 breast cancer patients at the hospital. Baladhika Husada Jember, the results obtained from items

number 15, 17, 18, 21, 22, 23, 24, 28, 29, 31 and 32 which have a correlation value of <0.361 (t table) then the item is said to be invalid so that from 43 items into 33 items that are said to be valid without reducing the grid from the questionnaire. Cronbach's alpha obtained in the questionnaire was 0.722. The psychosocial adaptation questionnaire trial with a total of 20 items was said to be valid with a correlation value > 0.361 (t table), while Cronbach's alpha value was 0.839, which means it was said to be reliable. Analysis of the data used is Chi square and logistic regression. This research involves humans so that an ethical test has been carried out by the ethics commission at Brawijaya University Malang with No. 3966/UN10.F17.10/TU/2022.

RESULTS AND DISCUSSION

Characteristics of Respondents

Table 1 presents the characteristics of the respondents with a total of 58 respondents. Based on the table above, the majority of respondents are in the early adult category, with 36 respondents (62.1%). Characteristics of respondents based on the type of work shows that the majority of respondents are housewives as many as 25 respondents (43.1%). Most of the respondents had the last level of education, namely SMA, with 31 respondents (53.4%). Most of the respondents' income levels were at a low level of 52 respondents (89.7%) . All of the respondents' medical expenses were sourced from health insurance, namely BPJS. The majority of respondents suffered from breast cancer for ≥ 3 months to 1 year by 38 respondents (65.5%). Most of the respondents chose to live with their nuclear family, namely husband and children, 33 respondents (56.9%), while almost all respondents stated that the closest member was their husband, namely 41 respondents (81%).

Focal Stimuli

Based on table 2, it was found that the majority of respondents as many as 38 respondents (65.6%) had breast cancer for > 3 months to 1 year and among them the majority of respondents namely 27 respondents (46.5%) had severe focal stimulus. Table 5.12 shows that the majority of respondents have a severe focal stimulus which also has low psychosocial adaptation of 29 respondents (50%). The bivariate results obtained a p value of 0.000, which means that H1 is accepted and H0 is rejected so that it is said that there is a relationship between focal stimulus and psychosocial adaptation. The results of the multivariate logistic regression test found that the OR value of the focal stimulus was 8.56, which means that respondents who had a severe focal stimulus were 8.6 times at risk of experiencing poor psychosocial adaptation.

These results are consistent with the research conducted by Yu, which found that symptoms have the strongest relationship with psychosocial adaptation in women with gynecological cancer (Yu et al., 2022) . According to Yu, the lower the physical and psychological symptoms, the higher the psychosocial adjustment in cancer patients (Yu et al., 2022) . The results of the research conducted by Mahendran found that cancer patients experienced distress due to the symptoms they felt, so that the distress caused unmet psychosocial needs (Mahendran et al., 2017). In addition, Alias argues that symptoms of distress are also obtained

from the chemotherapy cycle, according to him the chemotherapy cycle is closely related to the side effects caused by the chemotherapy (Alias & Henry, 2018) . The more cycles of chemotherapy are carried out, the more severe the side effects will be. These side effects lead to

functional disabilities and disorders that have an impact on the patient's self-esteem, body image, interpersonal relationships, and interpersonal communication (Antoni et al., 2009).

Table 1. Characteristics of Respondents

No	Variable	Category	freq. (n=58)	%
1.	Age	26–45 Years	12	20.7
		46–55 Years	36	62.1
		56–65 Years	10	17.2
		Total	58	100
2.	Work	Farmer	12	20.7
		Laborer	7	12.1
		Self-employed	12	20.7
		civil servant	2	3.4
		IRT	25	43.1
		Total	58	100
3.	Education	Primary School	16	27.6
		Junior High School	8	13.8
		Senior High School	31	53.4
		College	3	5.2
		Total	58	100
4.	Income	≤ Rp. 1.500.000	52	89.7
		Rp. 1.500.000 – Rp. 2.500.000	4	6.9
		Rp. 2.500.000 – Rp. 3.400.000	2	3.4
		Total	58	100
5.	Cost of treatment	Independent	0	0
		BPJS	58	100
		Total	58	100
6.	Long Suffered	≤ 3 Months	8	13.8
		≥ 3 Months	38	65.5
		≥ 1 Year	12	20.7
		Total	58	100
7.	Living together	Main family	33	56.9
		Husband	20	34.5
		Child	5	8.6
		Total	58	100
8.	Immediate Family Members	Husband	47	81.0
		Child	11	19.0
		Parent	0	0
		Sibling	0	0
		Total	58	100

Table 2 . The Relationship of Focal Stimulus with Psychosocial Adaptation

Psychosocial Adaptation	Focal Stimulus				Total		p.s *value*	Exp (B) / OR
	Mild		Severe					
	n	%	n	%	n	%		
Well	14	24,1	5	8,6	19	32,7	0.000	8,568
Poor	10	17,2	29	50	39	67,3		
Amount	24	41,3	34	58,6	58	100		

*Source: Primary Data 2022
* Chi Square test

Cancer patients feel disturbed in the domain of sexual function and intercourse as a result of symptoms caused by colorectal cancer such as defecation. The results of a similar study also found that gynecological cancer patients experienced sexual dysfunction (Boden, 2018) (Zou et al., 2022). These patients show decreased or absent sex drive, altered female genital responsiveness (decreased or lost lubrication), presence of orgasmic problems, and vaginismus and dyspareunia. Similarly, male patients show that

testicular and prostate cancers experience premature ejaculation, erectile dysfunction and inhibition of orgasm (Caruso & Breitbart, 2020) . A similar study was also conducted by Sampong (Anim-Sampong et al., 2021) on respondents with breast cancer patients who had a mastectomy found that they felt less feminine, reported that they experienced psychological stress, and lost self-confidence due to their mastectomy. It was found that most

of the participants were psychologically and emotionally affected by mastectomy (Anim-Sampong et al., 2021).

Similar results were also obtained by Chow, in his research gynecological cancer patients also experienced sexual dysfunction so that it had an impact on psychosocial adaptation abilities with their partners, this was due to the effects of treatment, the symptoms caused and the physiological functions of their reproductive organs such as menopause (Chow et al., 2018). Researchers believe that the need for an approach to relieve symptoms of cancer patients, among others, by increasing the level of psychosocial adjustment using several non-pharmacological interventions that can be carried out by nurses such as relaxation therapy, mindfulness meditation, and psychotherapy. Therefore, it is necessary to consider the application of these interventions in cancer patients.

Based on the results of the logistic regression test, it was found that respondents who had a heavy focal stimulus increased the risk of having less psychosocial adaptation 8.6 times, respondents who had negative contextual stimuli were at risk of 6.6 times having less psychosocial adaptation and respondents who had less residual stimulus can be 6.3 times at risk of having poor psychosocial adaptation. Based on the results of the multivariate logistic regression test above, it was found that the most dominant subvariable affecting the psychosocial adaptation ability of patients with breast cancer was the focal stimulus subvariable with an OR of 8.568. These results are supported by research conducted by The symptom is first entered as a stressor, followed by resilience, and coping with cancer sufferers (Yu *et al.*, 2022).

Table 3 . Relationship of Contextual Stimulus with Psychosocial Adaptation

Psychosocial Adaptation	Contextual Stimulus				Total		p.s *value*	Exp (B) / OR
	Positive		Negative					
	n	%	n	%	n	%		
Well	15	25,8	4	6,8	19	32,7	0.000	6,592
Poor	10	17,2	29	50	39	67,3		
Amount	25	43	33	64,8	58	100		

*Source: Primary Data 2022
* Chi Square test

Contextual Stimuli

Table 3 shows that the majority of respondents, namely 36 respondents (62.1%), had an age range of 46-55 years , of which the majority, namely 22 respondents (37.9%), had negative contextual stimulus. Table 5.14 shows that most of the respondents who had breast cancer, namely 38 respondents (65.5%) of whom were mostly 21 respondents (36.2%), had negative contextual stimulus. Table 5.15 shows that the majority of respondents have negative contextual stimuli which also have less psychosocial adaptation of 29 respondents (50%). The bivariate results obtained a p *value* of 0.000 which means H1 is accepted and H0 is rejected so that it is said that there is a relationship between contextual stimulus and psychosocial adaptation. The results of the multivariate logistic regression test found that the OR value of the contextual stimulus was 6.592, which means that respondents who had negative contextual stimuli had a risk of 6.6 times experiencing poor psychosocial adaptation.

Breast cancer is closely related to the self-concept inherent in the sufferer which affects how self-acceptance a breast cancer patient is. Bard and Sutherland (2009) explained that after undergoing a mastectomy the problems or impacts of a mastectomy that occurred on the patient included impaired self-concept, impaired sexual activity, emotional disturbances, impaired social relationships, and psychological impacts. Based on his research, women with breast cancer feel unattractive because they think that the breast is a symbol of sexuality, so they also feel afraid of being abandoned by their partner.

The results of this study are different from the research conducted by Nofiya (2021). In his study, which was a qualitative study, the participants included in this study were patients with breast cancer who had had a mastectomy. In his research, the patient had a good self-acceptance towards himself, this was because in his study the majority of the participants were aged 50 years and over and it was revealed that he had surrendered and surrendered to the destiny that God had given him for his illness.

Table 4 . Relationship of Residual Stimulus with Psychosocial Adaptation

Psychosocial Adaptation	Residual Stimulus				Total		p- *value*	Exp (B)/OR
	Well		Poor					
	n	%	n	%	n	%		
Well	16	27.5	3	5,1	19	32.8	0.001	6,33
Poor	15	25,8	24	41,3	39	67.2		
Amount	31	53.4	27	46.6	58	100		

*Source: Primary Data 2022
* Chi Square test

Residual Stimuli

Based on table 5.16, it was found that the majority of respondents, namely 33 respondents (56.9%) lived with the

nuclear family, of which the majority of respondents, 22 respondents (37.9%) had good residual stimulus. Table 5.17 shows that the majority of respondents have less residual stimulus which also has less psychosocial adaptation of 24

respondents (41.3%). The bivariate results obtained a p value of 0.001 which means that H1 is accepted and H0 is rejected so that it is said that there is a relationship between residual stimulus and psychosocial adaptation. The results of the multivariate logistic regression test found that the OR value of the contextual stimulus was 6.33, which means that respondents who had negative contextual stimuli had a risk of 6.3 times experiencing poor psychosocial adaptation.

Other studies have also linked family support with psychosocial adaptation, such as in a study conducted by Ghamari which examined the relationship between perceptions of family and friend support and psychosocial adaptation in cancer adolescents. Based on the results of the study, it was found that the perceived score of family support was directly related to the score of psychosocial adaptation on the dimensions of the family environment and the score of perceived support from friends was directly related to the total score of psychosocial adaptation and attitudes towards illness, social and environment (Ghamary et al., 2022) . The results of the regression test conducted by Kang and Rizalar found that the strongest relationship was obtained by cancer stigma, coping strategies and social support (Kang et al., 2020) (Rizalar et al., 2014) . The results of research conducted by Li found that there was a significant relationship between spiritual well-being and psychosocial adaptability in post-colostomy patients. Based on indicators of psychosocial adaptation in his research, it was found that adaptation scores to extended family relations were the highest, and adaptation scores to sexual relations were the lowest (Li et al., 2012) .

The results of a study conducted by Wechsler and Cheung compared the psychological adaptation of children with cancer from a different survival perspective with children without cancer and found No differences were found between groups regarding school and clinical discipline, personal adjustment, emotional symptoms and self-concept (Wechsler et al., 2022) (Cheung & Mok, 2013) . Based on the research results, Ghamary argues that family members as the closest people are the most important source of support and the most influential factor in the child support system. Some studies have found that support from family and friends is equally important, but some studies have found that teens with cancer get less support from friends than healthy teens.

In a study conducted by Moreira (2015) which examined the intimacy of couples with breast cancer. Women with breast cancer have a psychosocial impact on their lives, such as the changes that occur in their inherent roles as wives and housewives. The demands associated with providing care can significantly disrupt a partner's life and routine. Given the interdependence that characterizes couples, one would expect mutual influence and the same level of interference between a woman and her partner. Therefore, partners are expected to provide support in the form of emotional support, such as listening, empathizing with, reassuring, and entertaining the patient) and instrumental support such as accompanying the patient for treatment (Moreira & Canavarro, 2013) . Jagenow showed that the perception of peer support in adolescents 9-15 years old is the same as the perception of family support, but adolescents aged 16-18 years consider the perception of family support as a source of support (Jagenow et al., 2015) . Adolescents with cancer depend on a variety of sources of social support to cope with the diagnosis and treatment of their disease. Family members can directly support the patient's coping and adaptation strategies. Therefore, the family influences emotional and psychological adjustment (López, 2021) . The results of another study were found by Zegaczewski who examined that there was an influence between family support, namely healthy siblings of children with cancer or healthy siblings of children with cancer (HSCC) with the psychosocial adaptability of siblings / children suffering from cancer (Zegaczewski , 2016) .

CONCLUSION

Based on the results of the study, it was found that there was a relationship between the adaptive stimulus contained in RAM and psychosocial adaptation. Adaptation stimulus is divided into focal stimulus, contextual stimulus and residual stimulus. Distress symptoms are measured as a focal stimulus, self-concept is measured as a contextual stimulus that arises due to distress symptoms, while the residual stimulus is a stimulus obtained from the environment such as family support. This study proves that all adaptation stimuli have a relationship with psychosocial adaptation where the focal stimulus is the dominant stimulus that affects the psychosocial adaptation ability of breast cancer patients.

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ETHICAL CLEARANCE

This research involves humans so that an ethical test has been carried out by the ethics commission at Brawijaya University Malang with No. 3966/UN10.F17.10/TU/2022.

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