Implementation of The Nurse’s Role as a Cognator Control to Minimize the Stress Level of Cervical Cancer Patients

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Abstract. Cervical cancer is a disease that affects every aspect of human life, including physiological and social aspects. Patients use adaptive coping mechanisms to maintain self-integrity using stimulus. Maladaptive coping strategies can cause stress. The nurses’ roles as cognate controllers can help patients improve their adaptability. This study aimed to analyze the relationship between nurses’ roles and the stress levels of cervical cancer patients. This research conducted an analytical descriptive study using a cross sectional approach. Sample sizes were 30 newly diagnosed cervical cancer patients in the Oncology Polyclinic of Dr Soetomo Hospital, taken using a consecutive sampling technique for one month. Data related to the varying roles of the nurses as cognators control and the stress levels among cervical cancer patients were collected via questionnaire. The data were analyzed using the Spearman’s Rho statistics test with significant level α < 0.05. This study showed a significant correlation between the nurses’ role and stress levels among cervical cancer patients (p = 0.007, r = 0.0485). The positive roles of nurses can improve adaptability and decrease patients’ stress levels by providing comprehensive health education.

1. Introduction
Cancer is a malignant neoplasm disease that has a very broad and complex spectrum [1], [2]. The disease is very complex that can have an impact not only on the sufferer, but also on their families and the community. Cancer patients have problems with fear, anxiety, depression, and helplessness [3]. Cervical cancer is ranked fourth in terms of malignancy in the world, after breast, colorectal, and lung cancer [4]. The regulatory subsystem involves the chemical systems of the body, nerves, and endocrine system, as well as manifestations in patient physiology. If coping with a cognator subsystem, associated with cognitive and emotional wellness, does not adapt well, it can lead to a malfunction in a patient’s psychology [5]. Stress from maladaptive coping in patients with cervical cancer is caused by the inability to solve a psychological threat posed by a popular assumption of the deadly disease.

A patient’s psychological factors can include powerlessness and lack of self-acceptance. These factors can affect the direct stress levels and anxiety of the patient, and can even cause depression [6]. Interacting with physicians and nurses can become problematic due to significant levels of cancer-related traumatic stress, less emotional self-efficacy, or reduced satisfaction [7]. Roy’s Adaptation Stress Theory reveals the role of nurses as cognator control by setting the focal, consensual, and residual stimulus for individuals. It can be done by knowing the cause of stress and providing nursing intervention, such as health education to support an adaptive coping patient. Nurses should provide information in accordance with the cause of stress and the effort that a patient can adopt and improve their ability to make decisions about the issue. In fact, when implementing its role, nurses rarely build
interpersonal relationships because they have to care for many patients within a short period of time [8].

According to IARC 2012 data, there were 14,067,894 new cancer cases and 8,201,575 cancer deaths worldwide. Cervical cancer was ranked seventh in the estimation of cancer deaths in the world population in 2012. The Indonesian Ministry of Health has noted that that the prevalence of cancer populations of all ages in Indonesia was estimated at 1.4% or approximately 347,792 people and the estimated number of patients in the East Java province is 21,313 [9]. The medical records of the Oncology Polyclinic of Dr Soetomo Hospital shows that the number of cervical cancer patients is 758 [10]. Preliminary studies carried out at the Oncology Polyclinic of Dr Soetomo Hospital on 20 new patients with cervical cancer showed that 11 people (55%) experienced severe stress, seven people (35%) experienced moderate stress, and just two people (10%) experienced low levels of stress. The interview data on the nurse who served in the oncology policlinic showed there was no special counselling for individuals. Health counselling is applied in groups on Fridays, just before examination by the nurse on duty.

Cervical cancer derives from a viral infection that stimulates epithelial cell behaviour changes in the cervix. After a cancer diagnosis is revealed, appropriate treatment for each case is determined. This type of therapy depends on the age and condition of the patient, the extent of the cancer’s spread, and other complications [1], [11]. The duration of cervical cancer diagnosis and treatment causes a patient to experience stress. Stress will also directly affect the physiological, psychological, and psychosocial functioning of patients. Fear of recurrence and long-term treatment causes stress. If stress was not treated immediately, it may result in the patient becoming uncooperative, not obeying the schedule, and exacerbating pain [12], [13]. Using Roy’s Adaptation Model, the prescribed nurse can help the patient improve their adaptability as cognator control for patients, by providing information related to the stressor. The Adaptation Model Approach by Roy aims to help people adapt to physiological needs: change, self-concept, role function, and interdependence for the healthy and ill (Alligood & Tommey, 2010). It is important to identify the disorder and fulfil the needs that cause problems for the client and decide how clients could adapt to their problem. Implementation is carried out by manipulation of focal, contextual, and residual stimulus experienced by patients, so it can be expected to reduce the stress of cervical cancer patients [12], [14].

2. Research Method
This research used an analytical descriptive design. The data were collected using a cross-sectional method. The population comprised of newly diagnosed cervical cancer patients who were treated at the Oncology Polyclinic of Dr Soetomo Hospital. There were 30 respondents. A consecutive sampling technique was used. The independent variable was the nurses’ role as cognator control; the dependent variable was the stress levels in patients with cervical cancer. Data collection research protocol was based on research protocol approved by research ethics committee at the Dr Soetomo Hospital. Data collection instrument was a questionnaire covering demographic data, the assessment of the nurses’ role as cognator control, and the stress levels of cervical cancer patients using the Depression Anxiety Stress Scale (DASS) 42. Data were analyzed using Spearman’s Rho $\alpha \leq 0.05$ of the significance level.

3. Result and Discussion
3.1. Result
The research was carried out with cervical cancer patients who were first treated in the Oncology Polyclinic of Dr Soetomo Hospital and who could communicate orally and in writing. All respondents had experienced advanced cervical cancer between IIB and IIIB.

Respondents were aged between 41 and 60 years. The majority of respondents (19 people) were educated at an elementary level (63.3%); two people were educated to college level (6.7%). The dominant status (20 people) for respondents was being married (80%) and housewife category was respectively below the married for 21 people (70%). However, there were two people (6.7%), who suffered from cervical cancer but were not married.
Table 1. Demographic Characteristics of Respondents (n = 30)

| Characteristic  | n | %  |
|-----------------|----|----|
| Age             |    |    |
| 21–40 years     | 3  | 10 |
| 41–60 years     | 17 | 56.7|
| > 60 years      | 10 | 33.3|
| Education       |    |    |
| Elementary School | 19 | 63.3|
| Junior High School | 7  | 23.3|
| Senior High School | 2  | 6.7 |
| College         | 2  | 6.7 |
| Work            |    |    |
| Housewife       | 21 | 70 |
| Farmer          | 5  | 16.7|
| Trader          | 1  | 3.3 |
| Private employees | 2  | 6.7 |
| Retired         | 1  | 3.3 |
| Marital status  |    |    |
| Not married     | 2  | 6.7 |
| Married         | 24 | 80 |
| Widow           | 4  | 13.3|

The data showed that 24 nurses (80%) at the Oncology Polyclinic had been recognized as good cognator controls but some were described as moderate. The stress levels of cervical cancer patients at the Oncology Polyclinic of Dr Soetomo Hospital were dominated by a low stress category for 17 people (56.7%), while 7 people (23.3%) experienced moderate stress. Of 24 respondents who gave good ratings, three patients (10%) experienced moderate stress and 15 people (50%) experienced low stress.

Nevertheless, six patients (2%) who rated a nurse’s role as moderate experienced stress. Using the Spearman's Rho test of the nurse’s role as cognator control, stress levels showed a significant p-value = 0.007, which means that H1 is accepted. There is a relationship between the nurse’s role as cognator control and the stress levels of patients with cervical cancer at the Oncology polyclinic of Dr Soetomo Hospital. The correlation coefficient $r = 0.485$ indicates that the relationship strength is moderate.

Table 2. The nurse’s role as cognator control and the stress levels in patients (n = 30).

| Nurse’s role | No Stress | Low Stress | Moderate Stress | Total | %  |
|--------------|-----------|------------|-----------------|-------|----|
| Good         | n         | %          | n               | %     | Σ  | %  |
|              | 6         | 20         | 15              | 50    | 24 | 80 |
| Moderate     | 0         | 0          | 2               | 7     | 4  | 13 |
| Total        | 6         | 20         | 17              | 57    | 7  | 23 |

Spearman's Rho $p=0.007$  $r = 0.485$

3.2. Discussion
Nurses’ roles as cognator control was rated by patients with cervical cancer and most people (24) chose the ‘good’ category (80%), even though six respondents (20%) rated the nurses’ role as moderate. The quick inspection process was caused by the demands of many patients requiring care; the lead nurse rarely motivated respondents to pray and worship according to their beliefs or convinces the respondent that they can still be a useful person.

Psychological health in cancer survivors is determined by the balance between two classes of factors: the stress and burden posed by their experience with cancer and the resources available for coping with the stress and burden are implications for nursing practice [7], [15]. The nurses have been friendly to patients, provided moral support for complaints, and have given information about the disease or treatment procedures. The nurse’s role describes the authority of someone who is set within clearly defined rules amidst the scope of nursing management. Nurses provide care, such as direct nursing care in accordance with the authority, and are responsible for managing the nursing services in all healthcare arrangements or educational settings within the scope of its authority. The nurse’s role as a cognator control is described by Roy’s Adaptation Stress Theory, which states that it is important to provide health education and make an effort for patients to adapt and improve their ability to make decisions about their care [16], [17].

The nurse must be broad-minded, have good communication skills, psychological understanding, and the ability to be a role model. Nurses interact with patients, so the ability to communicate is a fundamental aspect of nursing care. Through nurses’ communication, information or explanations can be provided for patients; persuading and entertaining patients is an integral part of the caring behaviour of nursing.

There were six respondents who rated nurse’s role as moderate, four of which had elementary education, one from junior high school, and one from senior high school. Six respondents who were housewives and a farmer rated the nurse’s role as moderate. Low levels of education and a short inspection process can be an obstacle for gaining and understanding the provided health information. Housewives carry out many activities at home and farmers with their responsibilities, mean that they are not so familiar with health information. The majority of respondents rated the nurses’ roles as good and this can be influenced by the level of nursing education. All of the nurses who work at the Oncology Polyclinic had achieved a Diploma. A well-educated person will be more broad-minded than those who are less educated [8]. The hospital quality improvement ensures the quality of its employees is improved by referring to Standard Operating Procedures (SOP). Indicators of nursing care quality assessments are carried out on a regular basis, such as accreditations, audits, and supervision affects the quality of nursing services and contributes towards improvements in nursing.

Stress level assessments were conducted by the questionnaire DASS 42, which indicated that most respondents experienced low stress (17 people; 56.7%), although seven people (23.3%) did experience some stress. There were six people who were not identified that experienced stress (normal). Respondents who experienced moderate stress were in too much difficulty to relax and have a break. Stress is part of human life. Psychological and physical stress is the tension caused by physical, emotional, social, economic, employment or circumstances, events, or experiences and can be difficult to manage or survive. A person suffers from stress when their experiences are a burden but they cannot solve the problem; the body will respond and the person will experience stress [6], [7], [18]. Humans are continually faced with a variety of complex issues, which therefore, need to adapt. The use of coping or self-defence mechanisms helps to perform roles and functions optimally to maintain the integrity of ill or healthy conditions from the environment [19]–[21]. The behaviour adaptation of a person, from change or deterioration, depends on the incoming stimulus and adaptability of the person. The nurse’s role as cognator control builds patients’ ability to adapt by providing health education to reduce stress.

Most patients with low stress levels rated nurses as cognator controls as good. The better the role, the more improvement of adaptability for incoming stimulus and reduction of stress levels. Low-stress levels and normal ranges can be affected by the age of respondents. The older the people, the lower the risk of experience stress. Increasing ages make a person more mature in their thinking and are more able to cope with confronting the stressor. Expectations and motivations in life make them more grateful; the problem is not their demand and burden in life. The more mature people’s emotions are,
the wiser they are in facing various problems [22]. Seven respondents (23.3%) who experienced moderate stress levels stated that their stress was caused by their occupation as a housewife and the lack of support from their family. High social support can ease problem solving including illness. The inability of a housewife to take care of her husband and children, becoming dependent on their husband’s income, contributes to their stress. Most respondents who took treatment at the Oncology Polyclinic were not accompanied by their husbands even though the husband could have been nearby to help their spouse feel safe despite their health condition. If a patient suffers severe stress and anxiety towards cancer treatment then a psychological response after appears to be more severe [23].

The Spearman’s Rho statistics analysis between the nurse’s role as cognator control and the stress level of new cervical cancer patients showed a significant value with a moderate correlation coefficient. The more skilled the nurse’s role, the better the respondent’s ability to manage their stress. Most respondents who received good service from the nurse as cognator control experienced lower stress levels. Emotional support is a crucial part of patient satisfaction and should be provided by several members of the oncological team, especially the patients’ physicians. In turn, it is crucial that medical professionals are equipped with good communication skills [24]. Good cognator control roles in nursing leads to an increasing positive coping mechanism, so the adaptability of patients will increase and the level of stress experienced will decrease.

The nurse's role depends on the learning process; attitude is an inheritance, but it is learned and built by individual experiences throughout life. Implications for Practice: Nurses and providers can assess and address stressors in transition. Nurses should design patient-centred interventions using peers as direct support to promote effective coping strategies [25]. A nurse's skill as the provider of nursing care depends on their experience, the situation, the norm in society, obstacles, and motivation in the community.

Roy’s Adaptation Model directs nurses in the development of the nursing process as cognator controls. The nursing process described by Roy’s Adaptation Model consists of six stages: behaviour assessment, stimulus assessment, nursing diagnosis, goal setting, intervention and nursing evaluation [3], [5], [17]. The nurse performs a unique role as a facilitator in the adaptation process by examining the behaviour of each model and factor affecting adaptation and intervention to improve the patient’s adaptation ability, improving adaptive responses and reducing ineffective individual responses.

Nurses modify the focal, contextual, and residual stimulus on individual by understanding the causes of stress and by providing nursing care interventions, such as therapeutic communication and health education, which allows the client to obtain a positive coping strategy. A small number of respondents (three out of 24) who rated the nurse’s role as good, still experienced moderate stress levels, while four out of six respondents who ranked the nurse’s role in the moderate category experienced moderate stress levels. Most respondents who were over 40 years old, had attended primary and secondary schools, were housewives or farmers, and married were suffering the advanced stages of cancer. Implications for practice was that nurses and providers can assess and address stressors in transition. Nurses should design patient-centred interventions using peers as direct support to promote effective coping strategies.

Nurse-directed interventions resulted in improved mental health for patients; however, physical subscales were not changed. Further work is needed to determine why depression and mental health were affected yet physical health and symptoms did not differ between groups. The results support the important role of nurses in addressing mental health issues in patients and families experiencing cancer [6]. Lack of family support, especially from the husband, also affect stress; feeling safe and warm around their family is a psychological need. Alligood & Tommey [4] recommends cancer symptom management intervention throughout the disease process with respect to patient autonomy.

Advanced cervical cancer also has an impact on social needs. Respondents as sociable humans need other people; they want to feel useful and comfortable to influence behaviour and defence in life. Intervention and treatment for patients’ psychological and emotional needs as part of the implementation of the role of the nurse as cognator control, will significantly support the treatment process because emotions can affect the immune system and prevent patients from an increasingly severe stress reaction.
4. Conclusions

In this study, the nurse’s role as cognator control in the management of cervical cancer patients was highlighted as good but still requires improvement. The stress levels of cervical cancer patients is mostly low, although some suffer moderate stress. The nurse’s role as a good cognator control will improve patient adaptation to stimulus and decrease stress level.

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