



MINDFULNESS TECHNIQUE AND LAVENDER AROMATHERAPY ON ANXIETY IN CERVICAL CANCER PATIENTS UNDERGOING CHEMOTHERAPY

Rosniati*, Erika, Nurul Huda, Sri Wahyuni, Misrawati

Nursing Study Program, Faculty of Nursing, Universitas Riau, Kampus Bina Widya KM. 12,5, Simpang Baru, Tampan, Pekanbaru, Riau 28293, Indonesia

*rosniati.bulat@gmail.com

ABSTRACT

Mindfulness technique and lavender aromatherapy in reducing anxiety levels in cervical cancer patients undergoing chemotherapy. This research method uses a quasi-experimental design with a one-group pretest-posttest approach. A total of 49 respondents who experienced mild to moderate anxiety were involved in this study. The level of patient anxiety was measured before and after the intervention using the Hamilton Anxiety Rating Scale (HARS) questionnaire. The interventions provided included mindfulness technique training and lavender aromatherapy during chemotherapy sessions. The results showed a significant decrease in patient anxiety levels after the intervention, with the average anxiety level dropping from 43.40 to 34.26. The results of the paired sample t-test statistical test showed a p value <0.05, indicating that mindfulness and lavender aromatherapy interventions were effective in reducing anxiety in cervical cancer patients undergoing chemotherapy. Based on these findings, mindfulness and lavender aromatherapy interventions can be integrated as complementary therapies in cancer patient care to reduce anxiety during the treatment process. This study supports Calista Roy's adaptation theory, which emphasizes the importance of environmental interventions in helping patients adapt emotionally and physically to the disease. Suggestions for educational and health institutions are to integrate mindfulness techniques and lavender aromatherapy into nursing curricula and clinical practice to improve the well-being of cancer patients. These techniques can also be applied independently by the community as a simple way to manage everyday anxiety.

Keywords: anxiety; cancer patients; chemotherapy; lavender aromatherapy; mindfulness

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INTRODUCTION

Cancer is one of the diseases that is greatly feared by the public. Based on data from the Ministry of Health, the prevalence of cancer in Indonesia reaches 136 per 100,000 population, placing it in 8th place in Southeast Asia. According to the 2021 Indonesian Health Profile, cervical cancer is ranked second after breast cancer, with 36,633 cases (17.2% of all cancer cases in women). The death rate from cervical cancer is also high, reaching 21,003 deaths or 19.1% of total cancer deaths. Cervical cancer is one of the most common types of cancer in women. Based on data from the International Agency for Research on Cancer (IARC) in 2020, cervical cancer is the fourth leading cause of death among women worldwide, with 604,127 cases and 341,831 deaths. In Asia, cervical cancer ranks first with 351,720 cases and 199,902 deaths. In Indonesia, according to GLOBOCAN 2020, there were 36,633 new cases of cervical cancer (17.2%), making it the second most common type of cancer after breast cancer, and the third leading cause of death from cancer. Cervical cancer can cause infertility, morbidity, and mortality, making it a serious threat to women's health (Faizal, I. et al., 2021).

Cervical cancer prevention can be done through several main steps: prevention of Human Papilloma Virus (HPV) infection through vaccination and avoiding risk factors, early detection, diagnosis, and palliative care for advanced cases. These prevention efforts are very

important in reducing the incidence of cervical cancer (Ministry of Health of the Republic of Indonesia, 2021). Prevention is divided into two types: primary prevention which includes HPV vaccination and avoidance of risk factors, and secondary prevention in the form of screening. However, the implementation of screening has not been optimal, so the government is increasingly promoting primary prevention efforts (Ministry of Health of the Republic of Indonesia, 2022). One of the treatments for cervical cancer is chemotherapy, which although effective in killing cancer cells, also causes physical and psychological side effects (Hafsah, 2022). Psychological effects such as anxiety often occur due to cancer diagnosis, duration of treatment, and perceived side effects (Widianti et al., 2023). Anxiety is a feeling of worry or discomfort that can affect a person's ability to carry out daily activities (Khalil et al., 2016).

One therapy that can reduce anxiety is mindfulness. This therapy, which is based on Callista Roy's nursing adaptation theory, uses breathing techniques, motivation, and dhikr to increase self-awareness and psychological adaptation (Rahman, 2020). Roy's theory also emphasizes the importance of physical and psychological aspects in forming adaptive behavior (Rohmawati & Rahmi, 2020). Through mindfulness, individuals learn to accept themselves without judgment, which can ultimately reduce anxiety (Putri & Gunatirin, 2020). In addition to mindfulness, aromatherapy can also help reduce anxiety, especially lavender aromatherapy which is known to have a relaxing effect and reduce anxiety thanks to its linalool and linalyl acetate content (Maharani, 2021; Sunarsih et al., 2020). This study aims to determine the effectiveness of the combination of mindfulness techniques and lavender aromatherapy in reducing anxiety in cervical cancer patients undergoing chemotherapy, based on the Callista Roy Adaptation Model.

METHOD

This study used a quantitative method with a quasi-experimental design that aims to determine the effectiveness of mindfulness techniques and lavender aromatherapy in reducing anxiety levels in cervical cancer patients undergoing chemotherapy. The design applied is One Group Pre-Test Post-Test, where anxiety levels are measured before and after the intervention without using a control group. Measurements are taken to ensure significant differences before and after treatment, so that the results of the study can describe the effects of the intervention more accurately. The scheme of this study is as follows:

Pre-Test (T1)	Treatment (X)	Post-Test (T2)
T1 was performed before the intervention	X is the provision of mindfulness techniques and lavender aromatherapy	T2 is performed after the intervention

An explanation of the research objectives, procedures, and implementation of anxiety measurement using the Zung Self-Rating Anxiety Scale (ZSRAS) questionnaire was conveyed to respondents in detail before starting the research, accompanied by the signing of an informed consent by the respondents. The Zung Self-Rating Anxiety Scale (ZSRAS) questionnaire has been proven to have validity and reliability in previous research by Setyowati, et al (2019) with a validity value of 0.530 and a reliability value of 0.658.

RESULT

The results of the study on the effectiveness of mindfulness techniques and lavender aromatherapy in reducing anxiety in cervical cancer patients undergoing chemotherapy. The study was conducted from May to June 2024, involving 49 respondents, and the results are presented in the form of tables and text. The analysis includes univariate for respondent characteristics including age, education level, respondent occupation and bivariate to assess the effect of intervention on anxiety.

Univariate Analysis

Table 1.
Frequency Distribution Based on Respondent Age (n=49)

Age	f	%
Early Adulthood	4	8.16
Middle Adult	38	77.55
Late Adulthood	7	14.29

Based on Table 1, the majority of respondents are in the age range of 40 to 60 years, with a total of 38 people (77.55%). In contrast, the early adult age group, namely 18 to 39 years, has the smallest number, namely only 4 people (8.16%).

Table 2.
Frequency Distribution Based on Respondents' Education Level (n=49)

Education	f	%
Elementary School Education	9	18.37
Middle and High School Education	27	55.10
higher education	13	26.52

Based on Table 2, the majority of respondents have junior high and high school education levels, with a total of 27 people (55.10%). Meanwhile, the group with elementary school education level recorded the lowest number, which was only 9 people (18.37%).

Table 3.
Frequency Distribution Based on Respondents' Job Level (n=49)

Work	f	%
Housewife	32	65.31
Private employees	11	22.45
Teacher	5	10.20
Retired	1	2.04

the other hand, the group with the lowest number is retirees, which only includes 1 person (2.4%).

Table 4.
Frequency Distribution Based on Characteristics of Respondents' Anxiety Levels before and after Intervention(n=49)

Anxiety	Pre-test		Post test	
	f	%	f	%
Light	25	50.02	43	87.76
Currently	24	49.98	6	12.24

Based on table 4, before the intervention of mindfulness techniques and lavender aromatherapy in cancer patients undergoing chemotherapy, 25 people (50.02%) experienced mild anxiety and 24 people (49.98%) experienced moderate anxiety. After the intervention, 43 people (87.76%) experienced mild anxiety and 6 people (12.24%) experienced moderate anxiety.

Bivariate Analysis

Table 5.
Shows the results of the analysis using the paired sample t-test

	Mean	p-value	t	df	N
Pre-test	43.40	0,000	11,058	48	49
Post test	34.26				

Based on Table 5, the average anxiety level of cervical cancer patients before the intervention was 43.40, which then decreased to 34.26 after the intervention, with an average difference of 9.14. The p-value of 0.000 (<0.05) indicates a significant difference between the anxiety levels of patients before and after the intervention. Thus, the results of the study indicate that the application of mindfulness techniques and lavender aromatherapy is effective in reducing anxiety levels in cervical cancer patients undergoing chemotherapy.

DISCUSSION

This study aims to determine the effectiveness of mindfulness techniques and lavender aromatherapy in reducing anxiety in cervical cancer patients undergoing chemotherapy. The study sample consisted of 49 respondents undergoing chemotherapy treatment, with the results analyzed and compared with relevant theories to reveal the impact of the intervention on patient anxiety levels.

Univariate Analysis

a. Respondent Age

The results of the study showed that most cervical cancer patients undergoing chemotherapy were in middle adulthood, reaching 77.55%. This age is often associated with various factors that affect health, such as hormonal changes and decreased physical and psychological conditions. Previous studies support these findings, showing that individuals in this age range tend to experience decreased physical and psychological abilities (Hurlock, 2017). Therefore, special attention to the health of patients in this age group is very important.

b. Respondent Education

Most patients have secondary education (junior high school and senior high school) with a percentage of 55.10%. The level of anxiety experienced by patients during chemotherapy is influenced by intrinsic and external factors. Adequate knowledge about chemotherapy is important to minimize anxiety. Previous studies have shown a significant relationship between the level of patient knowledge about chemotherapy and the level of anxiety experienced (Martina, 2016). Therefore, adequate health education can be an effective step in reducing anxiety.

c. Respondent's Occupation

The results of the study showed that the majority of respondents were housewives (65.31%). Limited access to information and low awareness of cancer often increase anxiety in this group. Research also shows that housewives tend to have higher levels of anxiety than other worker groups (Yudono, 2019). This shows the importance of access to information about cancer treatment and prevention.

Bivariate Analysis

This study evaluated the effectiveness of mindfulness techniques and lavender aromatherapy in reducing anxiety in cervical cancer patients undergoing chemotherapy. The research results showed that there was a significant difference in anxiety levels before and after the intervention, with a p-value of 0.000 (<0.05), which confirmed that both techniques were effective in reducing anxiety. Previous research has identified anxiety as a psychological condition that is often experienced by cancer patients due to the side effects of chemotherapy (Simanullang, 2020). These side effects can cause discomfort, fear and high anxiety during the treatment process, and can even cause frustration or hopelessness (Sari, 2014). Psychological interventions, such as mindfulness and aromatherapy, have been shown to help reduce anxiety (Ernst & D'Mello, 2020). The mindfulness technique used in this research involves breathing regulation which stimulates the parasympathetic nervous system which functions to relax the body. Research results support that mindfulness is effective in reducing anxiety, as stated by

Ulfa & Susanto (2023). Lavender aromatherapy has also been proven to be effective in reducing anxiety (Gempurdan & Anwar, 2022). Other research also supports the use of lavender aromatherapy as an effective intervention to reduce anxiety (Saputra et al., 2020). This is supported by the statement that aromatherapy can provide a relaxing and calming effect thereby increasing blood circulation (Marzouk et al., 2013; Sari & Sanjaya, 2020). The linalool compound in lavender oil has anti-anxiety and analgesic effects, thereby helping improve the patient's quality of life (Agustin et al., 2020).

CONCLUSION

Based on the research results, the author concludes that mindfulness techniques and lavender aromatherapy are significantly effective in reducing anxiety levels in cervical cancer patients undergoing chemotherapy. The combination of these two interventions has a positive impact on the emotional well-being of patients, making it a viable alternative complementary therapy for managing anxiety in cancer patients. In this study, the nursing theory applied is the Calista Roy adaptation model, which emphasizes how humans interact with and adapt to environmental changes. The integration of mindfulness techniques and lavender aromatherapy has been proven to create a calmer environment and support the emotional adaptation of patients. These interventions can be incorporated into nursing practice to help cancer patients adjust to the physical and psychological challenges they face. Furthermore, nurses play a crucial role in facilitating patient adaptation by modifying stimuli such as health conditions, the environment, and social support. With the right approach, nurses can assist patients in overcoming anxiety and improving their overall well-being throughout the treatment process.

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