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THE EFFECT OF STRUCTURED EDUCATION BASED ON MIDWIFERY CARE ON ANXIETY LEVELS AMONG PREMENOPAUSAL CERVICAL CANCER PATIENTS

Sari Wulan Asih[1], Sara Nurmala[2], Dyah Ayu Septika Wijaya[3], Novita Sari[4], Eka Herlina[5]
[1]Midwifery Study Program, Universitas Bina Bangsa, Jl Raya Serang - Jakarta, KM. 03 No. 1B, Panancangan, Cipocok Jaya, Serang, Banten 42124, Indonesia
[2]Pharmacy Study Program, Universitas Pakuan, Jl. Pakuan, Tegallega, Kecamatan Bogor Tengah, Bogor, Jawa Barat 16143, Indonesia
[3]Midwifery Study Program, Faculty of Health Sciences, Institut Teknologi, Sains, dan Kesehatan RS.DR. Soepraoen Kesdam V/BRW, Jl. S. Supriadi No.22, Sukun, Sukun, Malang, Jawa Timur 65147, Indonesia
[4]Psychology Study Program, Universitas Bina Bangsa, Jl Raya Serang - Jakarta, KM. 03 No. 1B, Panancangan, Cipocok Jaya, Serang, Banten 42124, Indonesia
[5]Chemistry study program, Universitas Pakuan, Jl. Pakuan, Tegallega, Kecamatan Bogor Tengah, Bogor, Jawa Barat 16143, Infonesia
*wulansarikasihsaputra@gmail.com

ABSTRACT

Premenopausal women with cervical cancer experience heightened anxiety due to hormonal changes, fear of treatment, and uncertainty about their future roles. Estrogen decline during perimenopause reduces neurotransmitter levels, further increasing vulnerability to anxiety. This study aimed to evaluate the effectiveness of structured education based on midwifery care in reducing anxiety levels among premenopausal cervical cancer patients at a public hospital in Banten. A quasi-experimental design with a one-group pretest–posttest approach was used. A total of 30 participants were selected through purposive sampling based on the following inclusion criteria: aged 35–50 years, diagnosed with cervical cancer, premenopausal status, and ability to communicate effectively. The dependent variable was anxiety level, measured using the validated Hospital Anxiety and Depression Scale–Anxiety (HADS-A). This instrument consists of 7 items, each scored on a 4-point Likert scale (0–3), with a total score ranging from 0 to 21, where higher scores indicate greater levels of anxiety. The Bahasa Indonesia version of the HADS-A was used, which has demonstrated good reliability with a Cronbach's alpha of 0.82. Anxiety levels were assessed before and after the intervention. The structured educational intervention covered four key topics: understanding cervical cancer, perimenopausal changes, anxiety management techniques, and psychosocial and family support. Data were analyzed using a paired t-test, with statistical significance set at $p < 0.05$. After the intervention, the proportion of respondents with normal anxiety levels increased from 16.7% to 46.7%, while severe anxiety decreased from 16.7% to 0%. The mean anxiety score significantly decreased from 12.40 to 8.10 ($p < 0.05$). Structured education grounded in midwifery care offers a holistic, woman-centered approach that has the potential to effectively alleviate anxiety in this vulnerable.

Keywords: anxiety; cervical cancer; HADS-A; midwifery care; premenopause; structured education

INTRODUCTION

Menopause is a natural biological transition marked by the cessation of menstruation for 12 consecutive months due to declining ovarian function and reduced estrogen production. It typically occurs between ages 48–55 and is accompanied by significant physical and psychological changes that can profoundly affect emotional well-being (Apriyani & Fatrin, 2022).The World Health Organization (Word Health Organization, 2020) estimates that by 2030, approximately 1.2 billion women worldwide will be over 50 years old, with 80% residing in developing countries—highlighting a growing need for targeted health support during this life stage (Asikin et al., 2024).

Premenopausal women diagnosed with cervical cancer face compounded challenges. Cervical cancer remains the second leading cause of cancer-related deaths among Indonesian women (Ekaputri & Ramadia, 2022). Beyond physical symptoms, patients often experience intense anxiety

stemming from altered body image, fear of treatment side effects, loss of fertility, and concerns about family and social roles (Widiasih *et al.*, 2022). The decline in estrogen during perimenopause further exacerbates mood disturbances by reducing serotonin and dopamine levels, increasing susceptibility to anxiety and depression (Muchsin & Heni, 2022)

Globally, cervical cancer continues to pose a significant public health burden, particularly in low- and middle-income countries. According to the Global Cancer Observatory (GLOBOCAN), cervical cancer remains one of the most common malignancies among women worldwide, with disproportionately high incidence and mortality rates in developing regions due to limited access to screening and comprehensive care (Sung et al., 2021). Advances in medical treatment have improved survival rates; however, longer survival has shifted clinical attention toward the psychological and quality-of-life outcomes of patients. Anxiety is among the most frequently reported psychological responses following a cancer diagnosis and is known to negatively influence treatment adherence and recovery. This highlights the need for interventions that address not only biomedical outcomes but also psychosocial well-being. Comprehensive cancer care therefore requires integrated psychological support strategies.

Psychological distress in cancer patients is strongly associated with uncertainty, perceived loss of control, and inadequate illness-related information. A systematic review by Walker et al., (2020) reported that structured educational and supportive interventions significantly reduce anxiety by improving patients' understanding of their illness and enhancing coping mechanisms. Education empowers patients to actively engage in their care, reduces fear of the unknown, and fosters adaptive emotional responses. In women facing reproductive health–related cancers, anxiety may be further intensified due to concerns about femininity, sexuality, and reproductive identity. Addressing these concerns requires a gender-sensitive and life-course approach to care. Interventions that are tailored to women's psychosocial needs are therefore essential.

Midwifery care emphasizes continuity, empowerment, and holistic support across the female life span, making it particularly suitable for addressing the psychosocial dimensions of gynecologic cancer. Recent evidence suggests that midwife-led educational and supportive interventions improve emotional outcomes, patient satisfaction, and psychological resilience in women with complex reproductive health conditions . Midwives' close therapeutic relationships with women enable trust-based communication, which is critical for addressing anxiety and emotional vulnerability. In public hospital settings, where oncology services are often overstretched, midwifery-based psychoeducation offers a feasible and cost-effective strategy. Integrating structured educational interventions into routine midwifery practice may therefore represent an innovative approach to improving mental health outcomes among premenopausal women with cervical cancer (Hartanti et al., 2020).

Although health education and psychosocial support are known to mitigate anxiety in cancer patients, most interventions lack structure and fail to incorporate the holistic, woman-centered philosophy of midwifery care. Midwives, as primary caregivers for women across the lifespan, are uniquely positioned to deliver empathetic, culturally appropriate, and comprehensive education. However, scientific evidence on the effectiveness of structured midwifery-based education specifically for premenopausal cervical cancer patients—particularly in public hospital settings remains limited (Ilafi Rumaisya N, 2020). This study addresses this gap by evaluating whether a standardized educational intervention grounded in midwifery principles can effectively reduce anxiety levels in premenopausal cervical cancer patients. The findings aim to inform clinical practice and policy, supporting the integration of midwifery-led psychoeducation into national oncology care pathways

METHOD

This study employed a quasi-experimental design with a one-group pretest–posttest approach. The research was conducted at a public hospital in Banten Province in 2025. The population consisted of all premenopausal women diagnosed with cervical cancer receiving care at the facility. A total of 30 participants were recruited using purposive sampling based on the following inclusion criteria: aged 35–50 years, confirmed diagnosis of cervical cancer, premenopausal status (still menstruating or within 12 months of the last menstrual period), ability to communicate verbally, and willingness to provide informed consent. Exclusion criteria included severe cognitive impairment or pre-existing psychiatric disorders.

The independent variable was structured education based on midwifery care, delivered in three 45-minute sessions over one week. The content was developed collaboratively by a multidisciplinary team (midwifery, psychology, and pharmacy) and covered: Understanding cervical cancer and available treatments, Physiological and psychological changes during perimenopause, Non-pharmacological anxiety management (e.g., diaphragmatic breathing, positive self-talk), Psychosocial support and family involvement strategies. The dependent variable was anxiety level, measured using the validated Hospital Anxiety and Depression Scale-Anxiety (HADS-A). This instrument contains 7 items scored 0–3, yielding a total score range of 0–21 (higher scores indicate greater anxiety). The Bahasa Indonesia version was used, with established reliability (Cronbach's $\alpha = 0.82$).

Data collection involved administering the HADS-A questionnaire before (pretest) and one week after (posttest) the intervention. Data analysis included univariate analysis to describe respondent characteristics and bivariate analysis to assess the intervention's effect. Normality was tested using Shapiro-Wilk. If normally distributed, a paired t-test was used. Statistical significance was set at $p < 0.05$. Ethical approval for this study was obtained from the Health Research Ethics Committee of STIKES Yayasan Rumah Sakit Dr. Soetomo, with ethical clearance number KEPK/YRSDS/001/I/2026.

RESULT

This study involved 30 respondents of premenopausal cervical cancer patients who met the inclusion criteria at Banten State General Hospital in 2025. The characteristics of the respondents are presented descriptively in the following table**.**

Characteristic Responden

Table 1 presents the distribution of respondent characteristics based on age, educational level, type of work, and cancer stage among premenopausal women with cervical cancer who participated in this study. These characteristics are important to describe the demographic and clinical profile of respondents, which may influence their psychological responses and levels of anxiety. Age and educational background are related to cognitive maturity and health literacy, while type of work reflects social roles and daily responsibilities. Cancer stage represents the clinical severity of the disease and may affect both physical condition and emotional well-being. Understanding these baseline characteristics provides essential context for interpreting the study findings.

Based on Table 1, the characteristics of the respondents in this study show that the majority of respondents were in the 41–45 age group, amounting to 12 people (40.0%). The 46–50 age group ranked second with 10 respondents (33.3%), while the 35–40 age group was the smallest group with 8 respondents (26.7%). In terms of education level, the majority of respondents had a high school education, amounting to 10 people (33.3%), followed by a junior high school education of 9 people (30.0%). Respondents with elementary school education numbered 6 people (20.0%), while those with tertiary education were the smallest proportion, amounting to 5 people (16.7%). Based on type of employment, the majority of respondents were housewives, amounting to 18 people (60.0%).

Respondents who worked as self-employed numbered 7 people (23.3%), while those who worked as employees numbered 5 people (16.7%). In terms of cervical cancer stage, the majority of respondents were in stage II, 14 (46.7%), with 10 (33.3%) having stage III, while the smallest group, 6 (20.0%), had stage I.

Table 1.
Respondent Characteristics Based on Age, Education, Type of Work and Cancer Stage (n= 30)

Respondent characteristics	f	%
Age		
35–40	8	26,7
41–45	12	40,0
46–50	10	33,3
Education		
Elementary School	6	20,0
Junior High School	9	30,0
Senior High School	10	33,3
University	5	16,7
Type of Work		
Housewife	18	60,0
Self-Employed	7	23,3
Employee	5	16,7
Cancer stage		
Stadium I	6	20,0
Stadium II	14	46,7
Stadium III	10	33,3

Univeriate Result of Anxiety Level

Table 2 illustrates the distribution of respondents' anxiety levels before and after the implementation of the structured educational intervention. This table aims to describe changes in anxiety categories as an initial indicator of the intervention's effectiveness. Anxiety levels were classified into normal, mild, moderate, and severe categories based on standardized assessment criteria. Comparing pre-intervention and post-intervention data allows for an overview of shifts in psychological status among respondents. The presentation of these data provides descriptive evidence of anxiety reduction following the intervention. Detailed frequencies and percentages for each anxiety category are shown in the table below.

Table 2.
Respondents' Anxiety Level Before and After Intervention (n=30)

Anxiety Level	Before		After	
	f	%	f	%
Normal	5	16,7	14	46,7
Mild Anxiety	9	30,0	10	33,3
Moderate Anxiety	11	36,6	6	20,0
Severe Anxiety	5	16,7	0	0

Table 2, respondents' anxiety levels before and after the provision of structured midwifery-based education showed a clear change. Before the intervention, the majority of respondents were in the moderate anxiety category, namely 11 respondents (36.6%). Nine respondents (30.0%) had mild anxiety, while five respondents (16.7%) had normal and severe anxiety.

Bivariate Result of Anxiety Level

Table 3 presents the bivariate analysis of anxiety levels by comparing the average anxiety scores before and after the structured educational intervention. This analysis was conducted to determine the statistical significance of changes in anxiety levels following the intervention. The paired *t*-test was used to assess differences in mean anxiety scores between pretest and posttest measurements. This statistical approach is appropriate for evaluating the effect of an intervention within the same group of respondents. The results highlight whether the observed reduction in anxiety scores is not due to chance. Detailed findings of the mean scores, standard deviations, and significance values are shown in the following table.

Table 3.
Difference in Average Anxiety Scores between Pretest and Posttest (n=30)

	Mean	SD	Difference of mean	P value
Before	12,40	3,10	4,30	0,000
After	8,10	2,85		

Based on Table 3, the analysis using a paired t-test indicates a significant difference between the average anxiety scores of respondents before and after the provision of structured midwifery-based education. The average anxiety score before the intervention was 12.40 with a standard deviation of 3.10, while the average anxiety score after the intervention decreased to 8.10 with a standard deviation of 2.85. The difference in average anxiety scores before and after the intervention was 4.30 points, indicating a decrease in anxiety levels after the provision of structured midwifery-based education. The statistical test results obtained a p-value of 0.000 ($p < 0.05$), thus concluding that there was a statistically significant difference between anxiety levels before and after the intervention.

DISCUSSION

The results showed that the majority of respondents were in the 41–45 age group (40.0%), followed by the 46–50 age group (33.3%) and the 35–40 age group (26.7%). The majority of respondents had a high school education (33.3%), followed by junior high school (30.0%), elementary school (20.0%), and college (16.7%). In terms of occupation, respondents were dominated by housewives (60.0%), then self-employed (23.3%) and employees (16.7%). Based on cancer stage, the largest proportion was in stage II (46.7%), then stage III (33.3%) and stage I (20.0%). Before the intervention, the highest level of anxiety was in the moderate category (36.6%), while after the intervention the largest proportion was in normal anxiety (46.7%). The average anxiety score decreased from 12.40 to 8.10 after being given structured education.

The characteristic patterns of age and anxiety in cervical cancer patients may be linked to the intense emotional experiences associated with diagnosis and treatment. Research by Hidayah et al. (2023) found that age and education level influence anxiety patterns in cervical cancer patients, but are more dominantly related to anxiety levels when facing treatments such as radiotherapy, where anxiety can affect their sleep patterns. These results suggest that cancer patients should receive adequate psychological support in addition to medical treatment. The presence of high anxiety during the productive age phase indicates the need for more intensive support. These findings align with the results of this study, which showed high levels of anxiety before intervention. This confirms that age and psychological burden interact in the context of cervical cancer(Hidayah et al., 2023).

The reduction in anxiety following structured education is consistent with research on psychological interventions in cervical cancer patients that emphasizes the importance of a holistic approach to anxiety reduction. Research by Gu et al. (2024) showed that a mindfulness-based intervention helped improve psychological variables in cervical cancer patients in a randomized controlled trial. These interventions, while differing in approach, overlapped with the principle of patient psychological empowerment. Structured education also aimed to equip patients with information to reduce uncertainty and help them develop better coping strategies. These findings support the effectiveness of education as a strategy to reduce anxiety (Gu et al., 2024).

In terms of work roles, housewives tend to experience additional psychological stress when facing a chronic illness. Qualitative findings on the psychological experiences of cancer patients indicate that patients experience significant psychological changes and require psychosocial adaptation. Anxiety can arise from changing family roles and concerns about domestic duties. Uncertainty can exacerbate mental stress. Structured education helps patients understand their situation more realistically. This type of intervention is effective in reducing anxiety, as seen in the results of this

study (Sinaga et al., 2020) .

The higher distribution of cancer stages in stages II and III in this study is relevant to findings showing that disease stage influences patients' psychological responses. Research from secondary studies indicates that patients with advanced cervical cancer often experience emotional changes and psychological stress due to the complexity of treatment. These changes can include concerns about prognosis and side effects of therapy. These emotional changes contribute to high anxiety before education. Therefore, education and support are important strategies in patient care. This supports the reduction in post-intervention anxiety found in this study (Kurniasih & Goretik, 2024).

The reduction in anxiety following structured education is consistent with research on psychological interventions in cervical cancer patients, which emphasizes the importance of a holistic approach to reducing anxiety. Research by Gu et al. (2024) showed that a mindfulness-based intervention helped improve psychological variables in cervical cancer patients in a randomized controlled trial. These interventions, while differing in approach, overlapped with the principle of patient psychological empowerment. Structured education also aimed to provide patients with information to reduce uncertainty. This also helped them develop better coping strategies. These findings support the effectiveness of education as a strategy to reduce anxiety (Gu et al., 2024).

Comprehensive health education is crucial for early empowerment of cervical cancer patients. Other research has shown that the process of developing an educational program can increase awareness about cervical cancer among study participants. Continuous and systematic education helps patients understand the risks and preventative measures. In the context of this study, the provision of structured education was also oriented towards building a comprehensive understanding. Empowerment through education helps patients manage their concerns, which helps reduce anxiety, as seen in the study results. (Chadha et al., 2025).

Psychosocial support is also an important factor in managing anxiety in cervical cancer patients. Research on patient anxiety and family support shows that social support can influence patients' anxiety responses. Family and community support help patients feel safer and reduce feelings of isolation. Educational interventions provided by healthcare professionals can strengthen this support. This is relevant to the decrease in anxiety in this study after education was provided. Social support and education complement each other in strengthening patients' psychological well-being (Rahmah, 2021).

The findings of this study indicate that a structured, midwifery-based educational intervention significantly reduced anxiety levels. This finding aligns with other educational interventions that have found that providing good information can change patients' perceptions and anxiety. Structured education provides patients with an opportunity to understand their disease and treatment more clearly. This increases their sense of control and reduces uncertainty. The decrease in anxiety scores from 12.40 to 8.10 demonstrates a significant clinical effect. These findings support the importance of integrating education into clinical practice.

The significant difference in anxiety scores ($p = 0.000$) indicates that well-planned education can improve patients' psychological well-being. This effectiveness may occur because patients are provided with appropriate information, emotional support, and practical coping strategies. Good health education must consider the patient's cultural context and understanding. The observed changes in anxiety scores reflect the success of this approach. This demonstrates that anxiety is not a static condition and is amenable to intervention. This implication is important for the development of both inpatient and outpatient services.

Anxiety in cervical cancer patients is not only a response to the disease but is also influenced by the patient's psychosocial and cognitive factors. Appropriate education can help patients contrast accurate information with myths related to the disease. Structured interventions include education, emotional support, and guidance on coping strategies. All of this contributes to a better understanding and reduction of anxiety. This is evident in the increase in the proportion of normal anxiety after the intervention. Anxiety is dynamic and responsive to appropriate intervention.

According to the researchers' assumptions, the decrease in anxiety levels in premenopausal cervical cancer patients occurred because structured education provided a clear framework for understanding the clinical condition and treatment process. This education helps patients understand the physiological and psychological processes of the disease, thereby reducing the uncertainty that triggers anxiety. Furthermore, a holistic midwifery approach addresses the emotional, social, and cultural aspects of the patient. This creates a strong therapeutic relationship between the patient and the healthcare provider. The role of education in enhancing the patient's sense of self-control is key to reducing anxiety. Therefore, structured midwifery-based education is worthy of recommendation as an integral part of healthcare services for cervical cancer patients.

CONCLUSION

This study concludes that structured education based on midwifery care is effective in reducing anxiety levels among premenopausal women with cervical cancer in public hospitals. The majority of respondents were aged 41–45 years, had secondary education, were housewives, and were diagnosed at stage II cervical cancer, with moderate anxiety being the most prevalent before the intervention. After the structured educational intervention, there was a notable shift toward normal anxiety levels, accompanied by a significant decrease in the mean anxiety score. Statistical analysis using the paired *t*-test demonstrated a significant reduction in anxiety levels following the intervention ($p < 0.05$). These findings indicate that structured, holistic, and patient-centered educational approaches play a crucial role in addressing psychological distress in women with cervical cancer. Therefore, structured education based on midwifery care should be considered an integral component of comprehensive cervical cancer management in public hospital settings.

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