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Physical Changes, Anxiety, and Menopause Readiness Among Premenopausal Women: A Cross-Sectional Study

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ABSTRACT

Background*: The menopausal transition is accompanied by various physical and psychological changes that may influence women's preparedness to cope with this stage of life. Although menopause is a natural physiological process, inadequate readiness may increase emotional distress and reduce women's ability to adapt to menopausal changes. Evidence regarding the combined association of physical changes and anxiety with menopause readiness among community-dwelling premenopausal women in Indonesia remains limited.*
Objective*: This study aimed to examine the association between physical changes, anxiety, and menopause readiness among premenopausal women.*
Methods*: An analytical cross-sectional study was conducted among 65 premenopausal women aged 40–50 years in Muntur Village, Losarang District, Indramayu Regency, Indonesia. Participants were selected using systematic random sampling. Physical changes were assessed using a structured questionnaire, anxiety was measured using the Hamilton Anxiety Rating Scale (HAM-A), and menopause readiness was evaluated using a structured readiness questionnaire. Descriptive statistics were used to summarize respondents' characteristics, while associations between variables were analyzed using the Chi-square test with a significance level of 0.05.*
Results*: More than half of the respondents (53.8%) were not prepared for menopause. Most participants experienced mild physical changes (52.3%) and mild anxiety (43.1%). Physical changes were significantly associated with menopause readiness (p = 0.018). Anxiety level was also significantly associated with menopause readiness (p = 0.016), indicating that women with fewer physical complaints and lower levels of anxiety tended to demonstrate better readiness for menopause.*
Conclusion*: Physical changes and anxiety were significantly associated with menopause readiness among premenopausal women. Strengthening health education and psychosocial support before menopause may improve women's preparedness and facilitate a healthier menopausal transition.*

Introduction

Menopause is a natural biological process that marks the permanent cessation of menstruation due to the progressive decline in ovarian function and estrogen production. (Maria et al., 2026) Although it represents a normal stage in women's reproductive aging, the menopausal transition is often accompanied by physical and psychological changes that vary in severity and may substantially influence women's health, daily functioning, and overall quality of life. (Barrea et al., 2021)(Thakur & Dhall, 2025) As global life expectancy continues to increase, more women are expected to spend a considerable proportion of their lives in the postmenopausal period, making menopause an increasingly important public health concern that

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requires greater attention from healthcare professionals and policymakers. (Cowell et al., 2024) (Whelan et al., 2026)

During the menopausal transition, women commonly experience a wide range of physical symptoms, including menstrual irregularities, vasomotor disturbances, sleep problems, excessive sweating, fatigue, musculoskeletal discomfort, weight gain, and urogenital complaints. (Vidhyashree et al., 2026) These manifestations are primarily associated with hormonal fluctuations, particularly declining estrogen levels, although the intensity and frequency of symptoms differ across individuals. (Davis et al., 2023)(Heavey et al., 2025) Women experiencing more severe physical symptoms often report greater disruption of daily activities, reduced quality of life, and greater difficulty adapting to menopausal changes. (Money et al., 2024)(Smith et al., 2025) Consequently, physical symptoms may influence not only physical well-being but also women's confidence and preparedness to cope with menopause. (Быханова et al., 2017) (Smith et al., 2025)

In addition to physical symptoms, psychological responses play a crucial role throughout the menopausal transition.(Lang et al., 2025) Anxiety is among the most frequently reported psychological concerns during this period and may arise from uncertainty about aging, changes in body image, declining reproductive capacity, sexual health, and future health conditions. (Shadhiya & Sasikala, 2025)(Lang et al., 2025) Persistent anxiety can influence the way women perceive menopause, reduce their confidence in managing menopausal symptoms, and limit their willingness to seek health information or professional support. (Nisa Firdausi et al., 2025)(Tidblom et al., 2025a) These psychological responses may ultimately hinder women's readiness to face menopause and adapt to the changes associated with this life stage. (Tariq et al., 2023)(Olid, 2025)

Menopause readiness reflects a woman's ability to anticipate, understand, and adapt to the physical, psychological, and behavioral changes associated with menopause. (Sari et al., 2024)(Lestari et al., 2025) Women who are adequately prepared generally demonstrate better acceptance of menopausal changes, engage more actively in healthy lifestyle practices, and seek appropriate healthcare when needed. (Taylor-Swanson, Stoddard, et al., 2024)(Tidblom et al., 2025b) Conversely, inadequate readiness may contribute to emotional distress, maladaptive coping strategies, and poorer health outcomes. (Chaaya et al., 2025)(Moshfeghinia et al., 2025) Strengthening menopause readiness has therefore become an important objective of health promotion programs aimed at improving women's well-being during midlife. (Rostami-Moez et al., 2023)(Sari et al., 2024)

Previous studies have demonstrated that menopausal symptoms, knowledge, social support, and psychological factors contribute to women's experiences during the menopausal transition. (Muralikrishna et al., 2025)(Alsulami & Falattah, 2026) However, most available studies have examined these factors independently or have focused primarily on menopausal symptoms and knowledge. (Abdelmola et al., 2024) Evidence exploring the combined association of physical changes and anxiety with menopause readiness remains limited, particularly among community-dwelling premenopausal women in Indonesia. (Sari et al., 2024) Understanding these relationships is important because physical symptoms and psychological responses often occur simultaneously and may interact in shaping women's preparedness for menopause. (Bulut et al., 2025)(Küçükkaya et al., 2026) Such evidence is needed to support the development of community-based educational and psychosocial interventions that promote healthier adaptation during the menopausal transition. (Taylor-Swanson, Kent-Marvick, et al., 2024)(Spector et al., 2024)

Therefore, this study aimed to examine the association between physical changes, anxiety, and menopause readiness among premenopausal women in Muntur Village, Losarang District, Indramayu Regency. The findings are expected to provide evidence for community health

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programs that strengthen women's preparedness for menopause through early education, psychosocial support, and appropriate health promotion strategies.

Methods

Study Design and Setting

This study employed an analytical cross-sectional design to examine the association between physical changes, anxiety, and menopause readiness among premenopausal women. The study was conducted in Muntur Village, Losarang District, Indramayu Regency, West Java, Indonesia, between March and April 2022. A cross-sectional approach was considered appropriate because it enabled the simultaneous assessment of the study variables within the target population at a single point in time.

Population and Sample

The study population comprised all premenopausal women aged 40–50 years residing in Muntur Village. Based on village population records, 77 women met the eligibility criteria. The minimum sample size was calculated using the Slovin formula, resulting in a required sample of 65 respondents. Participants were selected through systematic random sampling to provide each eligible woman with an equal opportunity to participate in the study.

Women were eligible if they were 40–50 years of age, had not experienced natural menopause, were willing to participate, and provided written informed consent. Women with a history of reproductive disorders or those who declined participation during the study period were excluded.

Research Instruments

Data were collected using structured questionnaires administered directly to respondents.

Physical changes associated with the menopausal transition were assessed using a researcher-developed questionnaire based on commonly reported menopausal symptoms described in the literature, including menstrual irregularities, hot flashes, sleep disturbances, excessive sweating, fatigue, joint pain, urinary complaints, and vaginal dryness. Respondents reporting 0–3 symptoms were categorized as having mild physical changes, those reporting 4–6 symptoms as moderate, and those reporting more than six symptoms as severe.

Anxiety was measured using the Hamilton Anxiety Rating Scale (HAM-A), a standardized instrument consisting of 14 items that evaluate psychological and somatic symptoms of anxiety. Anxiety scores were classified into five categories: no anxiety (<14), mild anxiety (14–20), moderate anxiety (21–27), severe anxiety (28–41), and very severe anxiety or panic (42–56).

Menopause readiness was assessed using a structured questionnaire designed to evaluate respondents' physical, psychological, and behavioral preparedness for menopause. The questionnaire assessed women's acceptance of menopausal changes, health-seeking behavior, lifestyle adaptation, and psychological readiness. Respondents whose total scores exceeded the predetermined cut-off value were categorized as ready, whereas those scoring below the cut-off were categorized as not ready.

Data Collection Procedure

Prior to data collection, respondents received information regarding the objectives, procedures, potential benefits, and confidentiality of the study. Written informed consent was obtained before participation. The questionnaires were completed independently by respondents, while the researchers provided clarification whenever questions arose during the data collection process. Completed questionnaires were checked for completeness before being coded and entered into the database for analysis.

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Data Analysis

Data were coded, cleaned, and analyzed using the Statistical Package for the Social Sciences (SPSS). Descriptive statistics were used to summarize the distributions of physical changes, anxiety levels, and menopause readiness, and the results are presented as frequencies and percentages. The associations between physical changes, anxiety, and menopause readiness were examined using the Chi-square test. Statistical significance was determined at a p-value of <0.05 with a 95% confidence level.

Ethical Consideration

This study received ethical approval from the Ethics Committee of STIKes Aksari Indramayu (Approval No.14/KEP.STIKes Aksari/II/2025). Participation was voluntary, and written informed consent was obtained from all respondents before data collection. Respondents' anonymity and confidentiality were maintained throughout the study, and all procedures were conducted in accordance with the ethical principles of the Declaration of Helsinki.

Results

A total of 65 premenopausal women participated in this study. The distributions of physical changes, anxiety levels, menopause readiness, and the associations between the study variables are presented in Tables 1–5.

Most respondents experienced mild physical changes (52.3%), followed by moderate (33.8%) and severe physical changes (13.8%), indicating that menopausal-related physical symptoms were generally reported at a relatively mild level (Table 1).

Table 1. Distribution of Physical Changes among Premenopausal Women (n = 65)

Physical Changes	Frequency (n)	Percentage (%)
Mild	34	52.3
Moderate	22	33.8
Severe	9	13.8
Total	65	100.0

The distribution of anxiety levels is presented in Table 2. Mild anxiety was the most common condition, affecting 43.1% of respondents, whereas 29.2% experienced moderate anxiety. Approximately one-quarter of respondents (26.2%) reported no anxiety, while only one participant (1.5%) experienced severe anxiety. None of the respondents were categorized as having panic-level anxiety.

Table 2. Distribution of Anxiety Levels among Premenopausal Women (n = 65)

Anxiety Level	Frequency (n)	Percentage (%)
No anxiety	17	26.2
Mild	28	43.1
Moderate	19	29.2
Severe	1	1.5
Panic	0	0.0
Total	65	100.0

Regarding menopause readiness, more than half of the respondents (53.8%) were categorized as not ready to face menopause, whereas 46.2% were considered ready,

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suggesting that menopause preparedness remained suboptimal among the study population (Table 3).

Table 3. Distribution of Menopause Readiness among Premenopausal Women (n = 65)

Menopause Readiness	Frequency (n)	Percentage (%)
Ready	30	46.2
Not Ready	35	53.8
Total	65	100.0

The relationship between physical changes and menopause readiness is presented in Table 4. Respondents who experienced mild physical changes were more likely to demonstrate better menopause readiness than those reporting moderate or severe physical changes. Conversely, inadequate readiness was more frequently observed among women experiencing moderate and severe physical symptoms. The Chi-square test demonstrated a statistically significant association between physical changes and menopause readiness (p = 0.018), indicating that the severity of physical symptoms was associated with women's readiness to face menopause.

Table 4. Association between Physical Changes and Menopause Readiness

Physical Changes	Not Ready n (%)	Ready n (%)	Total n (%)	p-value
Mild	10 (33.4)	24 (68.5)	34 (52.4)	
Moderate	14 (46.6)	8 (23.0)	22 (33.8)	
Severe	6 (20.0)	3 (8.5)	9 (13.8)	
Total	30 (100)	35 (100)	65 (100)	0.018

Similarly, anxiety level was significantly associated with menopause readiness (Table 5). Women with no or mild anxiety generally exhibited better readiness for menopause, whereas inadequate readiness was more frequently identified among respondents experiencing moderate anxiety. The Chi-square analysis confirmed a statistically significant association between anxiety level and menopause readiness (p = 0.016).

Table 5. Association between Anxiety Level and Menopause Readiness

Anxiety Level	Not Ready n (%)	Ready n (%)	Total n (%)	p-value
No anxiety	4 (13.3)	13 (37.1)	17 (26.1)	
Mild	12 (40.0)	16 (45.8)	28 (43.0)	
Moderate	14 (46.7)	5 (14.2)	19 (29.2)	
Severe	0 (0.0)	1 (3.0)	1 (1.5)	
Panic	0 (0.0)	0 (0.0)	0 (0.0)	
Total	30 (100)	35 (100)	65 (100)	0.016

Discussion

Relationship between Physical Changes and Menopause Readiness

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The present study demonstrated a statistically significant association between physical changes and menopause readiness among premenopausal women (p = 0.018). Respondents who experienced milder physical changes tended to report better readiness to face menopause than those experiencing moderate or severe symptoms. These findings suggest that the intensity of menopausal symptoms may influence women's ability to prepare themselves physically and psychologically for the menopausal transition.

From the researchers' perspective, physical symptoms experienced during the premenopausal period are not merely physiological changes but also shape women's perceptions of menopause. Women experiencing relatively mild symptoms are more likely to perceive menopause as a natural life transition that can be managed through appropriate self-care and healthy lifestyle adjustments. In contrast, women reporting more severe symptoms may perceive menopause as a burdensome condition, thereby reducing their confidence and readiness to cope with subsequent changes. This finding highlights that women's subjective experiences of menopausal symptoms may influence their psychological preparedness in addition to their physical health.

These findings are consistent with previous studies reporting that women with fewer menopausal symptoms generally demonstrate better adaptation and preparedness during the menopausal transition. (Chowdhury & Chakraborty, 2017)(Tariq et al., 2023) Physical complaints such as vasomotor symptoms, sleep disturbances, fatigue, and musculoskeletal discomfort have been shown to negatively affect daily functioning and quality of life, potentially limiting women's capacity to prepare for menopause. (Mirkin et al., 2019)(Karakoç & Aşci, 2026) Similar observations have also been reported in studies indicating that increasing symptom severity is associated with poorer psychological adjustment and lower menopause readiness. (Arar & Erbil, 2023)(Koçak & Koçak, 2026)

Physiologically, the menopausal transition is characterized by declining ovarian function and fluctuating estrogen levels, which contribute to various physical manifestations experienced by middle-aged women. (Khalaf et al., 2025) Although these biological changes are inevitable, their impact differs considerably among individuals because of variations in health status, lifestyle, social support, and coping strategies. (Sriatmi et al., 2025)(Ernawati et al., 2025) Consequently, women with better physical health and fewer menopausal complaints may adapt more successfully and demonstrate greater confidence in facing menopause.

These findings emphasize the importance of early identification and management of menopausal symptoms through community-based health promotion. (Abdelmola et al., 2024)(Sukmayati et al., 2025) Education regarding symptom recognition, healthy lifestyle practices, regular physical activity, balanced nutrition, and timely consultation with healthcare providers may improve women's readiness by helping them understand that menopause is a normal life stage rather than a threatening condition. (Koyuncu et al., 2018)(Marco et al., 2025)

Relationship between Anxiety and Menopause Readiness

This study also identified a statistically significant association between anxiety and menopause readiness (p = 0.016). Women reporting lower anxiety levels were more likely to demonstrate better readiness for menopause than those experiencing higher levels of anxiety. These findings indicate that psychological well-being is closely associated with women's preparedness during the menopausal transition.

According to the researchers' interpretation, anxiety experienced before menopause often reflects uncertainty rather than the menopausal process itself. Concerns regarding aging, changes in physical appearance, declining reproductive function, and future health conditions may contribute to emotional distress, particularly among women who have limited knowledge about menopause. (Yamaç & Bakir, 2025) Such concerns may reduce women's confidence in managing

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menopausal changes and discourage proactive health-seeking behaviors, ultimately affecting their readiness for menopause. (Manoharan et al., 2023)(Thavabalan et al., 2025)

This finding is consistent with previous research identifying anxiety as one of the major psychological factors associated with menopause readiness. (Thavabalan et al., 2025) Women with lower anxiety levels generally demonstrate more positive attitudes toward menopause, better coping strategies, and greater willingness to seek health information and social support. (Stute & Lozza-Fiacco, 2022)(Yuan & Ren, 2025)Conversely, persistent anxiety may reinforce negative perceptions of menopause and reduce psychological readiness to cope with menopausal changes. (Huang, 2024)(Nisa Firdausi et al., 2025)

The relationship observed in this study may also be explained by the interaction between psychological adaptation and health behavior. (St-Pierre et al., 2019) Women who experience lower anxiety are more likely to engage in healthy lifestyles, communicate openly with healthcare professionals, and actively seek reliable information regarding menopause. (St-Pierre et al., 2019)(AlSwayied et al., 2024) These adaptive behaviors may strengthen both physical and emotional preparedness during the menopausal transition. (Nieroda et al., 2024)

From a public health perspective, the findings highlight the importance of integrating psychological support into menopause preparation programs. (Branquinho et al., 2026)(Kang, 2026) Community-based counseling, health education, peer support groups, and stress management interventions may help reduce anxiety while improving women's confidence and readiness to navigate menopause successfully. (McFeeters et al., 2024)(McFeeters et al., 2024)

Study Implications

The findings of this study demonstrate that menopause readiness is influenced not only by biological changes but also by psychological well-being. Therefore, interventions aimed at preparing women for menopause should adopt a holistic approach that addresses both physical symptoms and mental health. Strengthening menopause education through primary healthcare services, community health centers, and women's health programs may improve women's understanding of menopause, encourage healthy behavioral changes, and promote more positive adaptation during the menopausal transition.

Study Limitations

Several limitations should be considered when interpreting the findings of this study. First, the cross-sectional design precludes conclusions regarding causal relationships between physical changes, anxiety, and menopause readiness. Second, all study variables were assessed using self-reported questionnaires, making the findings susceptible to recall and response bias. Third, the study was conducted in a single rural community with a relatively small sample size, which may limit the generalizability of the findings to other populations. Future studies involving larger and more diverse populations, as well as longitudinal designs, are recommended to better understand factors influencing menopause readiness over time.

Conclusion

This study demonstrated that physical changes and anxiety were significantly associated with menopause readiness among premenopausal women in Muntur Village, Losarang District, Indramayu Regency. Women experiencing milder physical symptoms and lower anxiety levels tended to report better preparedness for menopause than those with more severe physical complaints or higher levels of anxiety.

These findings underscore the importance of integrating physical and psychological aspects into menopause preparation programs. Strengthening health education, promoting healthy

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lifestyle behaviors, and providing psychosocial support through primary healthcare services may enhance women's readiness to cope with the menopausal transition.

Future studies are recommended to include larger and more diverse populations and to employ longitudinal or prospective study designs in order to better understand the temporal relationship between physical changes, psychological factors, and menopause readiness.

Ethics Approval and Consent to Participate

This study was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki for research involving human participants. Ethical approval was obtained from the Ethics Committee of STIKes Aksari Indramayu (Approval No. 14/KEP.STIKes Aksari/II/2025). Written informed consent was obtained from all participants prior to data collection. Participation was voluntary, and respondents were assured that all information would be kept confidential and used solely for research purposes.

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