

Submitted: 08 September 2026

Accepted: 26 September 2026

Published: 29 September 2026

The relationship between knowledge about menopause and anxiety levels among premenopausal women

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Abstract

Background: Menopause is accompanied by various changes caused by reduced production of the sex hormones estrogen and progesterone. Common symptoms include insomnia, hot flashes, night sweats, dizziness, persistent headaches, joint pain, unexplained feelings of depression, pain during sexual intercourse, and vaginal dryness.

Purpose: This study aims to determine the association between knowledge about menopause and anxiety levels among premenopausal women.

Method: This quantitative analytical observational study employed a cross-sectional design. The participants were 34 premenopausal women aged 40-45 years. Participants were selected using cluster random sampling based on the established inclusion and exclusion criteria. Data were collected using a knowledge questionnaire and the Hamilton Anxiety Rating Scale (HAM-A). Primary data were analyzed using the chi-square test.

Results: Most participants had a moderate level of knowledge about menopause (52.9%). The chi-square test showed a statistically significant association between knowledge and anxiety levels among premenopausal women in Jatisawit, Balekatur, Gamping. Women with higher levels of knowledge tended to experience lower levels of anxiety about menopause.

Conclusion: Higher knowledge about menopause was associated with lower anxiety among premenopausal women. Providing education and health information may help improve women's psychological readiness for the menopausal transition.

Suggestion: Premenopausal women are encouraged to learn about the changes that occur during the menopausal transition and ways to manage anxiety. Healthcare professionals should provide more education about menopause. Future studies should consider using other anxiety instruments and involving larger samples, wider study areas, and additional variables.

Keywords: Anxiety; Knowledge; Premenopause.

INTRODUCTION

During menopause, there are many changes in the form of decreased production of sex hormones, namely estrogen and progesterone. Complaints during menopause include insomnia, hot flashes, night sweats, dizziness, continuous headaches, joint pain, unexplained feelings of distress, pain during sexual intercourse, vaginal dryness, and many others (Rofiah et al., 2025). In addition to physical symptoms, menopausal women may also experience mental or psychological symptoms (Alia et al., 2023). Menopause is a transitional period from the

reproductive phase to the non-reproductive phase, characterized by the end of the menstrual cycle. Most women experience menopause between the ages of 45 and 55 years (Rofiah et al., 2025).

Based on the World Health Organization (WHO), it is estimated that by 2030, there will be approximately 1.2 billion women aged over 50 years. Menopause is experienced by some women worldwide, with approximately 70-80% of women in Europe, 60% in America, 57% in Malaysia, 18% in China, and 10% in Japan and Indonesia. The

estimated population of Indonesia in 2025 reaches approximately 285–286 million people according to the latest demographic projections, with the age distribution showing that the majority are in the productive age group (15-64 years), accounting for approximately 68-69% of the total population. Based on age projection data, the number of individuals aged 40-44 years is estimated at approximately 20.8 million people, and those aged 45-49 years at approximately 19.4 million people, so that when combined, the population in the premenopausal age group of 40-49 years could reach approximately 40 million people in total in Indonesia in 2025 (Statistics Indonesia of the Special Region of Yogyakarta, 2025).

The Ministry of Health of the Republic of Indonesia projected that in 2025, the number of women entering menopause in Indonesia would reach approximately 60 million people. This figure shows a very significant increase compared with the condition in 2016, when the number of menopausal women was recorded at 14 million people or approximately 7.4% of the total population. This increase reflects demographic changes, particularly the increase in life expectancy and the growing number of elderly people in Indonesia. Meanwhile, the average age of women experiencing menopause in Indonesia is estimated to be around 48 years, as reported by previous researchers. This condition emphasizes the importance of attention to women's health during the premenopausal, menopausal, and postmenopausal periods, considering that its impact is not only on physical aspects but also on psychological and social aspects (Oktasari et al., 2024).

Based on the 2022 Population Census data, in the Special Region of Yogyakarta, the number of female residents aged 40-44 years was recorded at approximately 135,571 people, and those aged 45-49 years at approximately 133,377 people, so that the total number of women aged 40-49 years reached approximately 268,948 people in 2022. This age range is biologically a phase in which many women begin to experience hormonal changes known as premenopause, which is the transition stage toward menopause that generally occurs before the end of a woman's reproductive period. Based on regional demographic trends, which generally show relatively stable population growth, it can be estimated that the number of women aged 40-49 years in the Special Region of Yogyakarta in 2025 is within the same

range or slightly higher than the 2022 data, although specific official BPS figures for 2025 are not yet available. Thus, approximately ± 270 thousand women in the Special Region of Yogyakarta are estimated to be within the age range potentially entering the premenopausal phase around 2025, although the exact number will depend on local demographic dynamics until that year (Statistics Indonesia of the Special Region of Yogyakarta, 2022). Based on the results of the 2025 Population Census, the number of female residents in Sleman Regency aged 40–45 years was 42,903 people (Statistics Indonesia of the Special Region of Yogyakarta, 2025).

During menopause, a woman may experience emotional instability, which is indicated by excessive worry and changes in the body because the menstrual cycle stops. Hormones in the body also fluctuate, so mood can change at any time. This shows that a woman is very sensitive to the effects of hormonal changes and emotional conditions (Nursanti et al., 2024).

Anxiety that occurs can affect a person's thoughts, especially women who may experience stress and depression. The negative impact on the mental health of menopausal women will be greater if they are very concerned about their physical appearance. This can cause depression, sleep disturbances, feelings of restlessness, difficulty controlling urination, and trembling. However, if the woman has strong support from religious and spiritual aspects, the negative impact on her mental health will be reduced, so that feelings of anxiety do not arise (Dewi et al., 2021).

The risks and effects of anxiety that can occur in premenopausal women if not addressed make it important to pay attention to the health of women experiencing menopause. The physical and psychological changes that occur can cause various symptoms and health problems. Some of the problems commonly faced are loss of fertility and an increased risk of osteoporosis when approaching menopause, which can trigger anxiety in women. If not treated, the symptoms can become more severe, even causing low self-esteem, depression, and suicidal behavior (Indriani et al., 2025).

Medical professionals, especially midwives, play an important role in providing education and support to women who will experience menopause. This greatly affects the quality of life of these women. Thus, perimenopausal women are more prepared

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DOI: <https://doi.org/10.56922/mchc.v5i6.4>

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and able to accept changes in themselves with a positive attitude (Wati & Kusmawati, 2025).

In addition, family support also greatly influences the level of anxiety when facing menopause. To reduce anxiety, a woman needs to obtain knowledge about menopause through health education because this provides a positive impact on her psychological condition (Nuari et al., 2025). By obtaining sufficient knowledge and having a supportive psychological condition, such as being mentally prepared to face menopause, negative effects such as anxiety, uncontrolled emotions, and insomnia (sleep problems) can be prevented (Prihastuti, 2025).

RESEARCH METHOD

This study used a quantitative analytical observational design with a cross-sectional approach. The study was conducted in Jatisawit Village, Balecatur, Gamping. The accessible population consisted of 64 premenopausal women distributed across three neighbourhood associations: 15 women in RT 01, 19 women in RT 02, and 20 women in RT 03.

A total of 34 women aged 40-45 years participated in the study. Respondents were selected using cluster random sampling according to the predetermined inclusion and exclusion criteria. The inclusion criteria were women aged 40–45 years, having at least

elementary school education, having adequate awareness and cognitive abilities, being able to communicate effectively, and being willing to participate in the study.

Primary data were collected using two instruments: a menopause knowledge questionnaire and the Hamilton Anxiety Rating Scale (HARS). The HARS instrument The knowledge questionnaire assessed respondents' understanding of the definition and process of menopause, age at menopause, risk factors, symptoms, physical and psychological changes, and management of menopausal complaints.

Univariate analysis was performed to describe respondent characteristics, knowledge levels, and anxiety levels. Bivariate analysis was conducted to examine the relationship between menopause knowledge and anxiety level. The Chi-square test was used with a significance level of $\alpha = 0.05$.

Because the cross-tabulation contained several cells with small or zero frequencies, the assumptions of the Chi-square test should be checked before reporting the final inferential result. If the expected frequencies do not meet the assumptions of the Pearson Chi-square test, an appropriate exact test should be reported. The study received ethical approval from Universitas 'Aisyiyah Yogyakarta under ethical approval number 2464/KEP-UNISA/V1/2026.

RESEARCH RESULTS

Table 1. Characteristics of Respondents (N=34)

Variable	Results
Education (n/%)	
Low education	5/14.7
Secondary education	25/73.5
Higher education	4/11.8
Occupation (n/%)	
Homemaker	23/67.6
Laborer	3/8.8
Self-employed	4/11.8
Teacher	2/5.9
Private employee	2/5.9
Parity (n/%)	
Primipara	1/2.9
Multipara	33/97.1

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The table above shows the characteristics of respondents based on education, occupation, and parity. Most respondents had a secondary education level (25/73.5%), were homemakers (23/67.6%), and were multiparous (33/97.1%). The smallest proportion of respondents had higher education (4/11.8%), worked as teachers and private employees (each 2/5.9%), and were primiparous (1/2.9%).

Table 2. Relationship Between Knowledge Level and Anxiety Level Among Premenopausal Women

Variable	No Anxiety	Mild Anxiety	Moderate Anxiety	Severe Anxiety	Very Severe Anxiety	Asymp. Sig. (2-tailed)
Knowledge (n/%)						
Good	8/23.5	4/11.8	0/0.0	1/2.9	0/0.0	0.003
Fair	5/14.7	9/26.5	4/11.8	0/0.0	0/0.0	
Poor	0/0.0	1/2.9	0/0.0	1/2.9	1/2.9	

The table above shows the relationship between knowledge level and anxiety level. Respondents with good knowledge mostly experienced no anxiety (8/23.5%), while those with fair knowledge were mostly in the mild anxiety category (9/26.5%). Respondents with poor knowledge were distributed across mild, severe, and very severe anxiety categories (each 1/2.9%). The statistical analysis showed a significant relationship between knowledge level and anxiety level ($p = 0.003$).

DISCUSSION

These results indicate a tendency that the better the mothers' level of knowledge regarding premenopause, the lower the level of anxiety experienced in facing changes approaching menopause (Alia et al., 2023). Good knowledge enables women to understand that physical, psychological, and hormonal changes during the premenopausal period are physiological processes, thereby allowing them to develop more positive perceptions and reduce fear of menopause (Mansyah et al., 2024).

Based on the analysis of each question item, the percentage of incorrect answers exceeding 50% was found in the basic concepts of menopause indicator, including the definition of menopause as a physiological process (97.1%), understanding of the menopause process (100.0%), age at menopause (91.2%), risk factors for osteoporosis (79.4%), as well as physical changes and health risks such as breast cancer (94.1%) and hereditary factors affecting the age of menopause (82.4%). In addition, under the symptoms and impacts of menopause indicator, a relatively high percentage of incorrect answers was also found. The high percentage of incorrect answers

in these indicators indicates that most respondents did not yet fully understand the basic concepts of menopause and the physical and psychological changes accompanying it. This condition may be influenced by limited access to reproductive health information, low exposure to education regarding menopause, as well as the perception that menopause is a natural process, resulting in information about this phase receiving less attention before women actually experience it. These results indicate that respondents' understanding of the basic concepts, physical changes, symptoms, and impacts of menopause still needs to be improved.

The results can also be associated with the content of the anxiety questionnaire used in the study. The anxiety questionnaire assessed various psychological and physical responses, including becoming easily irritated when discussing physical changes, feeling tense when facing menopause, preferring to be alone, experiencing sleep disturbances, experiencing decreased memory and concentration, changes in feelings, feeling unable to perform activities, feeling tired and weak, heart palpitations, a feeling of pressure in the chest, decreased appetite, increased frequency of urination, dizziness or headaches when thinking about menopausal symptoms, as well as feelings of restlessness when facing menopause. Thus, a lack of understanding regarding physical and psychological changes during menopause may theoretically be associated with the emergence of various anxiety responses. For example, respondents who did not know that hormonal changes could cause sleep disturbances, mood changes, or certain physical complaints might interpret these complaints negatively and consequently feel more worried. This

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is consistent with the study distribution, which showed that among the group with poor knowledge, there were no respondents who experienced no anxiety. Conversely, of the three respondents with poor knowledge, one respondent each experienced mild anxiety, severe anxiety, and very severe anxiety. Meanwhile, in the group with moderate knowledge, no respondents experienced severe or very severe anxiety.

On the other hand, the questionnaire analysis showed that respondents had better understanding of several measures for managing menopausal complaints. This was evident in the statement regarding regular exercise, which can help manage menopausal complaints, and was answered correctly by 97.1% of respondents. The knowledge questionnaire also included management efforts such as consuming fruits and vegetables, particularly those containing vitamin C, consuming soybeans and their processed products, limiting caffeine and alcohol, as well as hormone replacement therapy as one of the efforts to reduce menopausal complaints. The high level of knowledge regarding measures to manage complaints indicates that respondents were relatively more familiar with health-maintaining behaviors than with the basic concepts and changes occurring during menopause. Knowledge regarding how to manage these complaints may be a factor that helps mothers feel capable of facing the changes, thereby allowing anxiety to be better controlled. However, knowledge regarding management alone is insufficient if it is not accompanied by an understanding of the causes, processes, signs and symptoms, as well as the physical and psychological changes of menopause. Therefore, health education for premenopausal mothers needs to be provided comprehensively, not only focusing on ways to reduce complaints, but also explaining that menopause is a physiological process, the timing of menopause, hormonal changes, the risk of osteoporosis, psychological changes, and various symptoms that may occur. When associated with the cross-tabulation between the level of knowledge and the level of anxiety, the research results further demonstrate a consistent pattern. Among respondents with good knowledge, totaling 13 people (38.2%), 8 respondents (23.5%) experienced no anxiety, 4 respondents (11.8%) experienced mild anxiety, and only 1 respondent (2.9%) experienced severe anxiety. There were no respondents with good knowledge who experienced moderate or very severe

anxiety. In the group with moderate knowledge, totaling 18 respondents (52.9%), most experienced mild anxiety, namely 9 respondents (26.5%), 5 respondents (14.7%) experienced no anxiety, and 4 respondents (11.8%) experienced moderate anxiety. No severe or very severe anxiety was found in the group with moderate knowledge. Meanwhile, all respondents with poor knowledge experienced anxiety at various levels, with 1 respondent (2.9%) each experiencing mild anxiety, severe anxiety, and very severe anxiety. This distribution indicates that the lower the level of knowledge, the greater the tendency for respondents to be in the more severe anxiety categories.

The results of this study indicate that the level of knowledge is one of the factors associated with the level of anxiety experienced by premenopausal mothers, in which respondents with better knowledge tended to experience lower anxiety compared with respondents with poor knowledge.

Theoretically, good knowledge will help women understand that physical, hormonal, and psychological changes during the premenopausal period are normal physiological processes, thereby reducing negative perceptions and fear of menopause (Mansyah et al., 2024). Conversely, women with poor knowledge tend to have misconceptions regarding the changes occurring during premenopause, making them more likely to experience anxiety when facing various emerging symptoms (Haryani et al., 2024).

Previous research also found a significant relationship between the level of knowledge and the level of anxiety in facing menopause, in which women with good knowledge were better prepared to face changes approaching menopause compared with women with poor knowledge (Panjaitan & Haro, 2024).

This finding is also supported by another study that obtained a p-value of 0.009, concluding that knowledge was significantly associated with mothers' anxiety in facing menopause (Saipullah et al., 2024). Another study also reported a relationship between knowledge regarding physical changes during premenopause and the level of mothers' anxiety in facing premenopause, with a p-value of 0.002, indicating that increasing knowledge through health education can be one of the efforts to reduce anxiety (Haryani et al., 2025).

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Conceptually, knowledge is one of the predisposing factors that influences a person's behavior and psychological responses in facing health changes, because individuals with good knowledge will more easily understand the causes, processes, and ways of dealing with the changes they experience (Potter et al., 2023). During premenopause, a good understanding of hormonal, physical, and psychological changes can help women perceive menopause as a normal physiological process, thereby reducing worry and building mental preparedness to face it (Lowdermilk et al., 2023). Conversely, limited knowledge regarding premenopause may lead to inaccurate perceptions of various changes experienced, making women more vulnerable to anxiety, fear, and even stress when symptoms begin to occur (Mansyah et al., 2024).

Adequate knowledge also plays a role in improving an individual's ability to employ adaptive coping mechanisms, because accurate information will help a person make appropriate decisions in maintaining physical and psychological health during the transition toward menopause (Panjaitan & Haro, 2024). In addition, women who understand reproductive changes during premenopause tend to have higher self-confidence in facing these changes, enabling them to control emotional responses and maintain a better quality of life compared with women with low levels of knowledge (Haryani et al., 2024).

Thus, the results of this study further reinforce that increasing knowledge through counseling, reproductive health education, health education, and the provision of continuous information by health workers is an important strategy in preparing women to face the premenopausal period optimally (Alia et al., 2023). Planned health education programs can not only increase knowledge but also develop positive attitudes, improve psychological preparedness, and reduce anxiety levels because women receive accurate information regarding the changes they will experience during the premenopausal period (Saipullah et al., 2024).

Therefore, health workers, particularly midwives, have an important role in providing comprehensive education regarding physical, psychological, and social changes during the premenopausal period so that women can accept these conditions as part of the normal aging process and undergo the transition toward menopause more calmly and confidently (Prawirohardjo, 2023).

CONCLUSION

Most respondents had a moderate level of knowledge about menopause (18/34; 52.9%). The findings indicated an association between menopause knowledge and anxiety among premenopausal women in Jatisawit Village. Women with better knowledge tended to have lower anxiety levels. However, because the study used a cross-sectional design, the findings should be interpreted as an association rather than a causal effect.

SUGGESTION

Premenopausal women are encouraged to obtain accurate information regarding the physiological, physical, and psychological changes associated with menopause. Health professionals, particularly midwives, should provide comprehensive and continuous education about the menopausal transition, with emphasis on areas in which respondents demonstrated limited knowledge. Future studies should consider larger sample sizes, broader study areas, additional factors associated with anxiety, and statistical methods appropriate for categorical data with small cell frequencies.

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