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Quality of Life and Risk Factors Associated with Menopause Among Middle-Aged Women in West Java

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Abstract

Menopause is a natural biological transition that may substantially influence women's physical, psychological, and social well-being. This study examined quality of life and factors associated with menopause among middle-aged women in West Java, Indonesia. An analytic cross-sectional study was conducted involving 210 women aged 45–60 years who were perimenopausal or postmenopausal. Data were collected using a structured questionnaire incorporating the Menopause-Specific Quality of Life (MENQOL) instrument, along with assessments of sociodemographic characteristics, lifestyle, health conditions, sleep quality, and stress levels. Data were analyzed using descriptive statistics, chi-square tests, and multivariate logistic regression ($p < 0.05$). Most participants reported moderate to poor quality of life, with the physical domain recording the highest mean score (4.87 ± 1.34). Poor quality of life was significantly associated with obesity ($p = 0.002$), low physical activity ($p = 0.001$), chronic disease ($p = 0.000$), poor sleep quality ($p = 0.000$), high stress levels ($p = 0.000$), and cigarette smoke exposure ($p = 0.031$). Multivariate analysis identified high stress as the strongest predictor of poor quality of life (AOR = 4.27; 95% CI: 2.11–8.65), followed by poor sleep quality (AOR = 3.84; 95% CI: 1.92–7.68). These findings indicate that menopause-related quality of life is influenced by multidimensional factors, particularly psychological and lifestyle determinants. Comprehensive and culturally sensitive interventions are needed to promote well-being and healthy aging among menopausal women.

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Introduction

Menopause is a physiological transition that generally occurs between 45 and 55 years of age and is characterized by the permanent cessation of menstruation due to declining ovarian function (World Health Organization [WHO], 2022). As a natural stage of the female aging process, menopause does not represent a disease; however, the hormonal and physiological changes accompanying this transition may produce a wide range of symptoms that influence women's physical, psychological,

sexual, and social well-being. Commonly reported manifestations include vasomotor symptoms such as hot flashes, sleep disturbances, mood changes, anxiety, fatigue, decreased sexual desire, and musculoskeletal discomfort (Avis et al., 2018). The occurrence and intensity of these symptoms vary considerably among women, indicating that the menopausal experience is influenced not only by biological changes but also by individual and contextual factors. Socioeconomic status, educational attainment, lifestyle, body mass index, cultural background, and existing comorbidities have been identified as factors that may shape the experience and severity of menopausal symptoms (Monteleone et al., 2018). The menopausal transition is also associated with a broad spectrum of physiological and psychological changes that may affect women's overall health status. Previous studies have described menopause as a complex health condition involving vasomotor, psychological, sexual, and somatic symptoms that require comprehensive assessment and appropriate management approaches (Dalal & Agarwal, 2015; Baber et al., 2016). Furthermore, evidence from Asian populations indicates that menopausal symptoms are influenced by biological changes as well as demographic, lifestyle, and environmental factors, resulting in considerable variation in women's experiences during menopause (Islam et al., 2015; Ziv-Gal & Flaws, 2016).

The increasing life expectancy of women has further strengthened the relevance of menopause as a public health issue. Women are now expected to spend a substantial proportion of their lives in the postmenopausal period, making the management of menopausal health an important component of women's health and healthy aging. The WHO (2022) recognizes menopause as an important stage of women's reproductive life course and emphasizes the relevance of appropriate information, health services, and support for women experiencing this transition. Nevertheless, access to information and appropriate healthcare services related to menopause remains unequal, particularly in developing countries. Limited knowledge regarding menopausal changes may contribute to the perception that symptoms are an unavoidable consequence of aging and therefore do not require professional attention. Such perceptions may delay health-seeking behavior and reduce women's opportunities to obtain appropriate support for managing symptoms and maintaining their quality of life.

This issue is particularly relevant in Indonesia, where demographic changes have increased the population of middle-aged and older women. West Java, as one of the provinces with a substantial female population, consequently faces important challenges in maintaining women's health throughout the menopausal transition. Despite the increasing relevance of menopause within the population, menopause-related health concerns have received relatively limited attention in public health programs. Many women continue to perceive menopausal symptoms as an inevitable condition associated with aging rather than as a health issue that can be managed through appropriate information, lifestyle modification, social support, and healthcare services (Rahman et al., 2021). This situation may be further influenced by sociocultural values within Indonesian communities. Discussions concerning reproductive health and reproductive aging may be considered private or sensitive, which can restrict communication between women, family members, communities, and healthcare providers regarding menopausal experiences.

The sociocultural context is important because women's perceptions of menopause can influence how they interpret and respond to symptoms. When symptoms are normalized or considered unavoidable, women may be less likely to seek healthcare assistance or adopt appropriate strategies to manage their physical and psychological well-being. Consequently, menopausal symptoms that are not adequately addressed may extend beyond individual discomfort and influence broader aspects of daily life, including emotional well-being, family relationships, occupational productivity, and participation in social activities (Utian, 2005). The impact of menopause on quality of life is therefore not limited to the presence or absence of individual symptoms. Rather, it involves interactions among physical changes, psychological responses, lifestyle behaviors, social relationships, and the cultural environment in which women experience menopause.

Previous research has demonstrated a substantial relationship between menopausal symptoms and quality of life among middle-aged women. Women experiencing more frequent or severe menopausal symptoms tend to report poorer quality of life, particularly when symptoms interfere with sleep, emotional stability, physical functioning, and social activities (Mishra & Kuh, 2006; Monteleone et al., 2018). Similar findings have been reported across different populations, demonstrating that menopausal symptoms are consistently associated with reduced physical, psychological, and overall quality of life among middle-aged and postmenopausal women (Li et al., 2016; Bansal et al., 2019; El Hajj et al., 2020). These findings suggest that assessment of menopause should extend beyond identifying the presence of symptoms to understanding their broader consequences for women's well-being. Quality of life provides an important framework for such assessment because it captures multiple dimensions of women's experiences rather than focusing exclusively on biomedical outcomes.

Several factors have been associated with poorer quality of life during the menopausal transition. Previous studies have identified obesity, insufficient physical activity, smoking, chronic health conditions, inadequate sleep, psychological stress, and limited social support as factors that may contribute to unfavorable menopausal experiences (Avis et al., 2018; Koo & Ahn, 2020). Sleep disturbances have been recognized as an important determinant of menopause-related quality of life because they are frequently associated with greater symptom severity and impaired daily functioning (Chen et al., 2017; Jafari et al., 2018). In addition, physical activity has been reported to influence menopausal symptoms and overall well-being, suggesting that lifestyle behavior may represent an important component of menopause management (Kim et al., 2014). These findings indicate that menopause-related quality of life is shaped by a combination of biological, behavioral, psychological, and social determinants. The influence of these factors may also differ by cultural and socioeconomic context. Consequently, findings obtained from one population cannot necessarily be generalized to women in another setting without considering differences in social norms, health behaviors, access to healthcare, education, and perceptions of menopause.

The existing literature, however, remains limited in several ways. Previous studies from different countries have contributed important evidence regarding the relationship between menopausal symptoms, sleep quality, physical activity, and quality of life (Li et al., 2016; Chen et al., 2017; Bansal et al., 2019; El Hajj et al., 2020; Koo & Ahn, 2020). However, much of the available evidence comes from populations with different sociocultural backgrounds, and many studies focus primarily on symptom prevalence or individual clinical factors rather than examining the interaction among demographic, psychosocial, lifestyle, health-related, and sociocultural determinants simultaneously. Although studies conducted in Indonesia have contributed important information regarding menopausal symptoms, the available evidence remains relatively limited and fragmented, particularly in relation to women living in West Java. Existing Indonesian research has tended to describe individual menopausal symptoms rather than comprehensively examining the combined influence of multiple factors on women's quality of life. This limitation creates a need for context-specific evidence that reflects the characteristics and experiences of Indonesian women within their local sociocultural environment.

The research gap is therefore located not only in the limited geographical evidence from West Java but also in the need for a more comprehensive understanding of the factors associated with quality of life during menopause. A multidimensional assessment is important because women's experiences of menopause may result from interactions among demographic characteristics, lifestyle behaviors, psychological conditions, social circumstances, and cultural perceptions. Focusing only on clinical symptoms may provide an incomplete understanding of why some women experience greater disruption to their quality of life than others. Similarly, examining individual risk factors separately may not adequately represent the complexity of the menopausal experience within a particular

community. Generating evidence that integrates these dimensions can provide a stronger basis for understanding the health needs of middle-aged women in the Indonesian context.

To address this gap, the present study adopts a comprehensive contextual perspective by examining menopause-related quality of life among middle-aged women in West Java while considering demographic, lifestyle, psychosocial, and sociocultural factors. This study's novelty lies in its multidimensional examination of factors associated with quality of life within the specific sociocultural context of Indonesian women in West Java. Unlike research that predominantly emphasizes symptom prevalence or biomedical characteristics, this study considers menopause as a broader health and well-being experience involving interconnected physical, psychological, social, lifestyle, and cultural dimensions. By integrating these perspectives, the study is expected to provide more contextually relevant evidence regarding factors associated with quality of life among middle-aged women experiencing menopause.

Quality of life itself refers to an individual's perception of their position in life within the cultural and value system in which they live and in relation to their goals, expectations, standards, and concerns (WHOQOL Group, 1995). This concept is particularly relevant to menopausal women because the transition may influence several dimensions of daily life simultaneously. Physical symptoms may affect functional capacity and comfort, psychological changes may influence emotional well-being, and social and cultural circumstances may determine how women interpret and manage their experiences. Accordingly, quality of life among menopausal women should be viewed as a multidimensional outcome that encompasses physical, psychological, social, and environmental aspects. Assessing these dimensions during midlife is important for identifying women who may be particularly vulnerable to unfavorable menopausal experiences and for supporting interventions aimed at promoting healthy aging and reproductive health.

Understanding the factors associated with menopause-related quality of life is also important from a public health perspective. Evidence from the local context can help healthcare providers develop more responsive health education and counseling approaches. It can also assist communities in recognizing menopause as an important stage of the female life course that requires appropriate information and support rather than being treated solely as an unavoidable consequence of aging. Furthermore, understanding the contribution of lifestyle and sociocultural factors may provide a basis for developing culturally appropriate health promotion strategies and community-based interventions. Such approaches may improve women's ability to manage menopausal changes and maintain their physical, psychological, and social well-being.

Based on these considerations, this study aims to examine quality of life and menopause-related risk factors among middle-aged women in West Java, Indonesia. Specifically, the study seeks to provide a contextual understanding of the factors associated with women's quality of life during the menopausal transition by considering demographic, lifestyle, psychosocial, and sociocultural dimensions. The findings are expected to provide empirical evidence to strengthen women's health services and inform health policies and interventions responsive to the needs and circumstances of menopausal women in West Java.

Materials and Methods

Research Design and Setting

This study used an analytic cross-sectional design to examine quality of life and menopause-related risk factors among middle-aged women in West Java, Indonesia. The cross-sectional approach was selected because it allowed the relationships between menopausal symptoms, associated risk factors, and quality of life to be assessed at a specific point in time (Setia, 2016). The study was conducted among women aged 45–60 years who were classified as perimenopausal or postmenopausal and resided in selected districts of West Java.

The study focused on the relationship between menopause-related characteristics and quality of life. The analytic cross-sectional design enabled the researchers to assess the distribution of relevant characteristics and examine their associations with quality-of-life outcomes within the study population. Because the data were collected at one point in time, the analysis aimed to identify associations rather than establish temporal or causal relationships between variables.

Population and Participants

The study population consisted of women aged 45–60 years living in the selected districts of West Java who met the predetermined eligibility criteria. Participants were eligible if they were within the specified age range and were experiencing either the perimenopausal or postmenopausal stage.

Women with severe mental disorders, cognitive impairment, or serious medical conditions that could interfere with communication, understanding of the questions, or completion of the research questionnaire were excluded from participation. These criteria ensured that participants could understand the study information and provide reliable responses to the questionnaire.

Sampling Technique

Participants were selected using purposive sampling. Recruitment was conducted through community health centers and local women's community groups. Potential participants were identified based on the established inclusion criteria, and eligible women were invited to participate in the study.

Before inclusion in the study, the eligibility of each potential participant was assessed according to the predetermined criteria. Women who met the criteria and agreed to participate were recruited as study participants. Purposive sampling was used to ensure participants represented the target population defined by the study criteria.

Data Sources and Data Collection

The study used both primary and secondary data sources. Primary data were obtained directly from the respondents through a structured questionnaire. Data were collected using a combination of face-to-face interviews and self-administered questionnaire forms. The questionnaire collected information on sociodemographic characteristics, reproductive history, lifestyle behaviors, health conditions, and menopause-related symptoms.

Secondary data concerning regional demographic characteristics were obtained from reports published by the Indonesian Central Bureau of Statistics and local health offices. These secondary data provided contextual information on the demographic and health characteristics of the study setting.

Prior to data collection, participants were informed about the purpose and procedures of the study. Participants who agreed to take part provided written informed consent. Data collection procedures were conducted while maintaining respondents' confidentiality and anonymity.

Variable Measurement and Research Instruments

The primary outcome variable was menopause-related quality of life. We measured quality of life using the Menopause-Specific Quality of Life (MENQOL) questionnaire, an instrument widely used and validated in menopause-related research (Hilditch et al., 1996). The MENQOL questionnaire assessed four domains of menopause-related quality of life: vasomotor, psychosocial, physical, and sexual.

In addition to quality of life, we collected information on several potential factors associated with menopause-related quality of life. These variables included physical activity, smoking status, body mass index, chronic diseases, sleep quality, and social support. We also collected

sociodemographic characteristics and reproductive history to describe the study participants and provide relevant contextual information for the analysis.

The questionnaire was administered either through face-to-face interviews or as a self-administered form, depending on the data collection procedure used. The responses were then compiled and prepared for statistical analysis.

Ethical Considerations

Ethical procedures were implemented throughout the study. Before data collection, participants received information regarding the purpose of the research and their participation in the study. All participants provided written informed consent before data collect
ion.

The relevant institutional ethics committee approved the study before it was conducted. Participation was voluntary, and respondents were informed that participation was based on their willingness. Confidentiality and anonymity were maintained throughout data collection and analysis, and the collected information was used for research purposes.

Data Processing and Statistical Analysis

The collected data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 26. Descriptive analysis was first conducted to summarise respondents' characteristics and the distribution of quality-of-life scores. Frequencies and percentages were used for categorical variables, whereas means and standard deviations were used to summarise continuous variables.

Bivariate analysis was subsequently performed to examine the associations between menopause-related risk factors and quality-of-life domains. Chi-square tests were used to assess associations involving categorical variables, while independent-samples t-tests were used to compare mean values between relevant groups.

Variables that demonstrated statistically significant associations in the bivariate analysis were subsequently included in a multivariate logistic regression model. The multivariate analysis was conducted to identify the dominant predictors of poor quality of life among postmenopausal women while considering the effects of the variables included in the model.

Statistical significance was determined using a p-value of less than 0.05 ($p < 0.05$). Statistical interpretation was based on the results generated by SPSS version 26, with the significance level applied consistently throughout the inferential analysis (Field, 2018).

Results and Discussion

Respondent Characteristics

A total of 210 middle-aged women from several districts in West Java participated in the study. Most respondents were aged 50–54 (38.1%), married (82.4%), and had completed secondary education (46.7%). Most respondents were postmenopausal (61.9%) and reported moderate levels of physical activity (52.9%).

Table 1. Sociodemographic Characteristics of Respondents (n = 210)

Variables	Frequency (n)	Percentage (%)
Age Group		
45–49 years	58	27.6
50–54 years	80	38.1
55–60 years	72	34.3
Marital status		
Married	173	82.4
Widow/Divorcee	37	17.6

Educational level		
Elementary school	49	23.3
Secondary school	98	46.7
Higher education	63	30.0
Menopausal Status		
Perimenopause	80	38.1
Post-menopause	130	61.9
Physical Activity		
Low	64	30.5
Currently	111	52.9
Tall	35	16.6

The study results showed that most participants were in early postmenopause, which is generally associated with increased menopausal symptoms due to hormonal changes. Education level and physical activity can influence women's ability to manage menopausal symptoms and maintain quality of life.

Quality of Life Among Middle-Aged Women

Quality of life was measured using the MENQOL instrument, which covers vasomotor, psychosocial, physical, and sexual domains.

Table 2. Average Scores of MENQOL Domains

Domain	Mean ± SD	Category
Vasomotor	4.12 ± 1.23	Currently
Psychosocial	4.45 ± 1.18	Currently
Physique	4.87 ± 1.34	Poor
Sexual	3.76 ± 1.41	Currently
Overall MENQOL Score	**4.30 ± 1.29**	**Currently**

The physical domain showed the highest mean score, indicating that physical symptoms such as fatigue, muscle pain, sleep disturbances, and decreased energy were the most serious problems experienced by respondents. Sexual symptoms showed the lowest score, although some respondents reported decreased sexual desire and vaginal discomfort.

Relationship between Risk Factors and Quality of Life

Bivariate analysis was performed to identify associations between menopause-related risk factors and quality of life.

Table 3. Relationship between Risk Factors and Poor Quality of Life

Variables	Poor Quality of Life n (%)	Good Quality of Life n (%)	p-value
Obesity	58 (72.5)	22 (27.5)	0.002*
Low Physical Activity	49 (76.6)	15 (23.4)	0.001*
Chronic Disease	61 (74.4)	21 (25.6)	0,000*
Poor Sleep Quality	67 (79.8)	17 (20.2)	0,000*
High Stress Levels	71 (82.6)	15 (17.4)	0,000*
Smoking Exposure	36 (66.7)	18 (33.3)	0.031*

Significant at $p < 0.05$

The analysis showed that obesity, low physical activity, chronic disease, poor sleep quality, stress, and exposure to secondhand smoke were significantly associated with poor quality of life among postmenopausal women.

Multivariate Logistic Regression Analysis

Multivariate analysis was performed to identify the dominant predictors influencing quality of life.

Table 4. Multivariate Logistic Regression of Factors Associated with Poor Quality of Life

Variables	Customized OR	95% confidence interval	p-value
Poor Sleep Quality	3.84	1.92–7.68	0,000*
High Stress Levels	4.27	2.11–8.65	0,000*
Chronic Disease	2.95	1.43–6.07	0.003*
Low Physical Activity	2.41	1.19–4.88	0.015*
Obesity	1.98	1.01–3.89	0.047*

Significant at $p < 0.05$

The study revealed that high stress levels were the strongest predictor of poor quality of life among menopausal women, followed by poor sleep quality and chronic disease.

Discussion

Quality of Life in Menopausal Women

This study found that the majority of middle-aged women in West Java experienced moderate to poor quality of life during menopause, with the physical domain being the most affected. This finding is consistent with previous research demonstrating that menopausal symptoms significantly influence women's overall quality of life, including physical functioning, psychological well-being, and social activities (Monteleone et al., 2018). Previous studies among postmenopausal women have also reported that greater severity of menopausal symptoms is associated with poorer quality of life, indicating that symptom burden plays an important role in shaping women's experiences during the menopausal transition (Nisar et al., 2015).

The high burden of physical symptoms observed in this study suggests that menopausal women in West Java may experience limitations in daily activities, comfort, and productivity. Muliira et al. (2018) reported similar findings, highlighting that quality of life among menopausal women is influenced by interactions among multiple domains, including physical symptoms, psychological conditions, and social factors. Beyond physical and psychological concerns, menopause may also affect sexual health and intimate aspects of women's well-being. Sexual symptoms, including decreased sexual function and related concerns, represent important but frequently under-recognized components of menopause-related quality of life (Zeleke et al., 2016). Therefore, assessment of menopause-related quality of life should consider multiple dimensions rather than focusing solely on individual symptoms.

Psychosocial symptoms were also commonly reported among respondents in this study. Mood instability, anxiety, and emotional sensitivity may occur during menopause as part of the complex interaction between physiological changes, psychological responses, and social circumstances (Avis et al., 2018). In some sociocultural contexts, emotional concerns related to menopause may remain insufficiently recognized, which may limit women's access to appropriate support and healthcare resources. Consequently, unmanaged psychological distress during the menopausal transition may further contribute to reduced quality of life and poorer overall well-being.

Influence of Lifestyle and Health Factors

This study shows that obesity and low physical activity are significantly associated with poor quality of life. Obesity can exacerbate vasomotor symptoms and increase the risk of metabolic disorders, thereby worsening the experience of menopause (Mishra & Kuh, 2006). Similarly, physically inactive women may have lower cardiovascular fitness and poorer stress adaptation, contributing to decreased physical and psychological health.

Women with chronic conditions such as hypertension and diabetes also reported significantly poorer quality of life. Chronic illnesses can exacerbate menopausal symptoms and create additional emotional and financial burdens. These findings support previous research emphasizing that menopausal health should not only focus on reproductive aging but also integrate the management of non-communicable diseases.

Psychological Factors and Sleep Quality

Stress and poor sleep quality emerged as the strongest predictors of poor quality of life. Sleep disturbances during menopause are commonly associated with hot flashes, hormonal fluctuations, and psychological distress (Utian, 2005). Previous studies have also demonstrated that psychological symptoms, including depressive symptoms and emotional disturbances, represent important components of menopausal health. Freeman (2015) reported that the menopausal transition may be associated with increased vulnerability to depressive symptoms, highlighting the importance of psychological assessment in menopausal care. In addition, vasomotor symptoms and sleep-related problems have been identified as important contributors to reduced quality of life, emphasizing the need for integrated approaches addressing both physical symptoms and psychological well-being (Carpenter et al., 2015; Thurston et al., 2016). Stress has been identified as a dominant factor affecting quality of life. Middle-aged women often experience multiple responsibilities related to work, family, caregiving, and economic pressures. In the West Javanese sociocultural context, women often play a central role in household management, which can increase the emotional burden during menopause. These findings highlight the importance of psychosocial support and stress management interventions for menopausal women.

Integration with Existing Knowledge and Research Novelty

This study contributes to existing knowledge by demonstrating that menopause-related quality of life is influenced not only by biological symptoms but also by psychosocial and lifestyle determinants within the local sociocultural context. Unlike many previous Indonesian studies that primarily describe menopausal symptoms, this study uses a multidimensional analytical approach that integrates physical, psychological, behavioral, and social risk factors simultaneously.

The uniqueness of this study lies in its contextual analysis of menopausal women in West Java, which emphasizes the interaction between stress, sleep quality, chronic diseases, and lifestyle behaviors in shaping women's quality of life. The findings suggest that culturally sensitive interventions focused on mental health, healthy lifestyles, and chronic disease prevention are crucial for improving the well-being of menopausal women. These results can serve as evidence for policymakers and healthcare providers in designing comprehensive community-based menopausal health programs.

Conclusion

This study concluded that quality of life among middle-aged women in West Java during the menopausal transition was generally moderate to poor, with the physical domain most affected. Menopausal symptoms, including fatigue, sleep disturbances, musculoskeletal discomfort, emotional instability, and reduced psychosocial well-being, significantly influenced daily functioning and overall

life satisfaction. Several menopause-related factors, including obesity, low physical activity, chronic disease, poor sleep quality, high stress levels, and cigarette smoke exposure, were significantly associated with poorer quality of life. Among these factors, high stress levels and poor sleep quality emerged as the strongest predictors, highlighting the important role of psychological and behavioral determinants in shaping menopausal experiences.

This study provides context-specific evidence that menopause-related quality of life is influenced by interconnected physical, psychological, lifestyle, and sociocultural factors. These findings emphasize the importance of comprehensive and culturally sensitive interventions to support menopausal women's well-being. Healthcare providers, particularly community health centers (Puskesmas), should develop integrated menopause health programs focusing on stress management, sleep improvement, physical activity promotion, and chronic disease prevention. Policymakers should incorporate menopause-related services into women's health promotion strategies. Future research should explore menopause experiences through longitudinal and qualitative approaches to better understand cultural perceptions, coping mechanisms, and the effectiveness of interventions across different regions in Indonesia.

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