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Review Article

Determinants impacting the quality of life in postmenopausal women: an in-depth narrative review

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ABSTRACT

The menopausal transition represents a pivotal phase in women's lives, marked by intricate physical, psychological, and social changes that collectively shape their quality of life (QoL). Postmenopausal women, characterized by the cessation of menstrual cycles and declining ovarian hormone production, experience a convergence of multifaceted influences during this critical period. This review aims to comprehensively explore and describe the factors impacting the QoL of postmenopausal women, offering valuable insights for healthcare practitioners, policymakers, and researchers seeking to enhance well-being in this life stage. In this descriptive review, the existing literature on postmenopausal women's QoL determinants is examined to provide a detailed understanding of the various contributing factors. The complex interplay of hormonal shifts, psychosocial dynamics, socioeconomic conditions, health status, and lifestyle choices intricately shapes the postmenopausal experience. These factors, whether independently or interactively, play a crucial role in defining the trajectory of postmenopausal QoL. A thorough exploration of available studies from various databases such as PubMed, Scopus, and PsycINFO was conducted. Relevant articles were identified through a combination of keyword searches and manual screening, focusing on studies that discuss the determinants of QoL in postmenopausal women. From a substantial initial pool, six key articles were selected based on their relevance and contribution to understanding the topic. Through this descriptive review, several key factors were identified as influential in shaping postmenopausal QoL. Hormonal changes, education level, lifestyle choices, attitudes towards menopause, self-perceived efficacy, family dynamics, menopause-related symptoms, and socioeconomic indicators emerged as significant determinants. Particularly, vasomotor and sexual symptoms were found to have a substantial impact on well-being across various dimensions. The review also highlighted the importance of targeted interventions to address specific facets of QoL in postmenopausal women, offering potential pathways for enhancing overall well-being during this life stage.

Keywords: Postmenopausal women, QoL, Determinants, Narrative review

INTRODUCTION

The menopausal transition marks a significant physiological milestone in a woman's life, symbolizing the cessation of reproductive capacity.¹ As women navigate this intricate phase, they undergo various physical, psychological, and social changes that collectively influence their overall QoL.² The postmenopausal phase,

characterized by the absence of menstrual cycles and the waning of ovarian hormone production, is a critical period where these multifaceted influences converge. Understanding factors that impact the QoL of postmenopausal women is paramount, given the implications for health professionals, policymakers, and researchers striving to enhance women's well-being during this life stage.^{3,4}

Amidst the intricate interplay of biological shifts and psychosocial dynamics, the QoL of postmenopausal women emerges as a complex construct, extending beyond mere physical health. Consequently, unraveling the determinants contributing to QoL becomes pivotal to devising targeted interventions that address the diverse needs of this demographic. Hormonal changes, psychosocial factors, socioeconomic circumstances, health status, and lifestyle choices collectively shape the postmenopausal experience.^{2,5,6} These factors, whether working in concert or isolation, weave a tapestry that defines the QoL trajectory for postmenopausal women.^{3,6-8}

In this comprehensive review, we synthesize and analyze the existing body of literature to elucidate the intricacies of factors associated with the QoL of postmenopausal women. By systematically examining and distilling relevant studies, we aim to provide a comprehensive overview of the multifaceted influences on QoL, offering insights that can inform clinical practices, policies, and future research endeavors. Ultimately, this exploration aims to contribute to a deeper understanding of the postmenopausal journey and to facilitate the development of tailored strategies that enhance the holistic well-being of women in this phase of life.

REVIEW STRATEGY

This narrative review follows a systematic and comprehensive approach to synthesize the existing literature on factors influencing postmenopausal women's QoL. The preferred reporting items for systematic reviews and meta-analyses (PRISMA) guidelines conducted the review to ensure transparency, rigor, and reproducibility in the review process.⁹

SEARCH STRATEGY

The search strategy employed for compiling the aforementioned narrative review article on factors affecting the QoL of postmenopausal women followed a comprehensive and systematic approach-the strategy aimed to identify relevant literature from various databases, ensuring a thorough coverage of the topic. The search was conducted within the specified timeframe, encompassing studies published between January 2010 and September 2021.

Key search terms were strategically selected to encompass the multidimensional nature of the topic. The following terms were utilized in different combinations: "postmenopausal women," "QoL," "factors," "determinants," "influences," and "well-being." Boolean operators (AND, OR) were employed to refine the search results and enhance the relevance of retrieved articles.

Three major electronic databases were accessed: PubMed, Scopus, and PsycINFO. These databases encompassed various biomedical, health, and psychological literature.

The search was not restricted by language to ensure inclusivity.

Additionally, a manual search was conducted through reference lists of identified articles to capture any potentially relevant studies that might not have been retrieved through the electronic search.

The initial search yielded a substantial number of articles, which were subsequently screened for eligibility based on predefined inclusion and exclusion criteria. Articles were included if they provided insights into the factors influencing the QoL of postmenopausal women. Exclusion criteria included studies with irrelevant focus, inadequate methodology, or incomplete data.

Following this rigorous search strategy, a final selection of 6 articles was identified and included in the review. This systematic approach ensured the retrieval of a diverse array of studies that collectively contributed to synthesizing and analyzing the multifaceted determinants influencing the QoL of postmenopausal women.

STUDY SELECTION

Eligibility criteria

The selection of articles for this narrative review on factors affecting the QoL in postmenopausal women was guided by carefully defined eligibility criteria, ensuring the inclusion of relevant and high-quality studies. These criteria were established to maintain a focused scope and to support a comprehensive analysis of the subject matter.

To ensure accessibility and consistency in the review process, only studies published in English were considered. The timeframe for eligible publications was set between January 2010 and September 2022. This period was chosen to capture the most recent and pertinent research, reflecting current knowledge and developments related to the QoL in postmenopausal women.

Studies involving populations outside the postmenopausal demographic, such as premenopausal women, men, or individuals outside the designated age range, were excluded. This ensured that the review specifically targeted factors influencing the QoL in postmenopausal women. Furthermore, only primary research articles were included, while review articles, editorials, commentaries, conference abstracts, and animal studies were excluded. This was done to prioritize original research and maintain a high level of methodological rigor.

To prevent the inclusion of outdated information, articles published before January 2010 or after September 2022 were not considered. The carefully established eligibility criteria were instrumental in selecting articles that provided meaningful insights into the QoL of postmenopausal women, thereby enhancing the credibility and validity of the review.

Table 1: Variables studied in various studies under review and main inferences.

Study	Country	Scale used	Aim	Age (in years)	Risk factors affecting QoL
Inceboz et al¹⁰	Turkey (Sample size=268)	Menopause rating scale (MRS), and QoL cale (WHOQOL-BREF-TR	To determine the factors affecting the severity of menopausal symptoms and the QoL among women living in Manisa, a western city of Turkey.	50.7±6.6	Age distribution: Mean MRS score for women aged 40-47 was 15.2±8.8, 48-55 was 18.7±8.7, and over 55 was 17.6±8.5, showing a significant difference ($F=4.24$, $p=0.015$). Marital status: Married participants had a mean MRS score of 17.9±8.6, while single had a lower mean of 13.9±8.9 ($p=0.013$). Menopausal status: Perimenopausal women had a mean MRS score of 15.3±9.1, natural menopause had a higher mean of 18.5±8.5, and surgical menopause showed a similar mean of 18.5±8.3, with a significant difference ($F=4.11$, $p=0.017$). Marital age: Those married for 2-20 years had a mean MRS score of 14.9±8.9, 21-30 years had a slightly higher mean of 16.2±8.4, and 31-49 years had a notably higher mean of 19.7±8.7, with a significant difference ($F=6.73$, $p=0.001$). Medical problems: Participants with medical issues requiring medication had substantially higher mean MRS scores of 19.2±8.8 compared to those without (mean 14.9±8.2), showing a significant difference ($p<0.001$). Findings suggest potential age-related, marital, menopausal status, marital age, and medical condition influences symptom severity and QoL experiences in postmenopausal women.
Norozi et al¹¹	Iran (Sample size=200)	Behavioral analysis phase of the PRECEDE model	They surveyed the factors associated with QoL of postmenopausal women in Isfahan, based on behavioral analysis phase of PRECEDE model.	55.74±4.77	The mean QoL score for postmenopausal women was 63.85±9.87. In the behavioral analysis phase of the PRECEDE model, attitude toward menopause had the highest mean score (63.13±13.40), while reinforcing factors had the lowest mean score (12.59±9.07). The analysis of predisposing factors revealed a significant correlation between QoL in postmenopausal women and their attitude toward menopause and perceived self-efficacy ($p<0.01$). However, there was no significant relationship between the QoL and the postmenopausal women's knowledge of menopausal issues ($p>0.05$). The Pearson correlation test demonstrated a statistically significant association between QoL in postmenopausal women and enabling and reinforcing factors ($p<0.01$).
Mohamed et al¹²	Egypt (Sample size=90)	Menopause specific QoL questionnaire (MENQOL)	To assess the menopausal related symptoms and their impact on the women's QoL.	Range: 40 to 60	In the vasomotor domain, the mean scores were 2.32±1.48 for menopausal transition and 2.86±0.56 for postmenopausal. For the psychosocial domain, scores were 2.77±1.50 and 3.17±1.36 for menopausal transition and postmenopausal, respectively. In the physical domain, mean scores were 2.14±0.72 for menopausal transition and 2.48±0.75 for postmenopausal. In the sexual domain, menopausal transition scored 2.92±2.01, and postmenopausal scored 3.55±1.92. Notably, a statistically significant difference was observed in the physical domain ($t=2.11$, $p=0.03$), suggesting potential variations in physical symptoms between the two groups.

Continued.

Study	Country	Scale used	Aim	Age (in years)	Risk factors affecting QoL
Nazarpour et al ¹³	Iran [Sample size=405]	WHO QoL - BREF (WHOQOL-BREF), the MRS	To determine the factors associated with QoL among postmenopausal women.	52.8±3.7	Duration of menopause in months displayed specific associations with QoL dimensions. Longer menopause durations were correlated with lower psychological well-being ($r=-0.140$, $p<0.01$), and there was a negative correlation between menopause duration and environment dimension ($r=-0.109$, $p<0.05$), suggesting potential declines in environment-related experiences as menopause prolongs. Additionally, overall QoL score exhibited a negative correlation with menopause duration ($r=-0.127$, $p<0.05$), highlighting potential overall impact of menopause duration on the perceived QoL. Waist-to-hip ratio, indicating body composition, significantly correlated with various QoL dimensions. There were negative correlations between the waist-to-hip ratio and physical health ($r=-0.160$, $p<0.001$) and stronger correlations with psychological health ($r=-0.210$, $p<0.001$), suggesting connections between body composition and well-being. The waist-to-hip ratio also negatively correlated with the environment dimension ($r=-0.151$, $p<0.01$), implying links between body composition and perceived environmental quality. The overall QoL score exhibited a significant negative correlation with the waist-to-hip ratio ($r=-0.195$, $p<0.001$), suggesting broader implications of body composition on overall well-being. Spearman's correlation coefficient test results indicated notable associations between the education levels of women and husbands and QoL dimensions. Higher education levels for women were positively correlated with physical health ($r=0.166$, $p<0.01$), psychological health ($r=0.254$, $p<0.001$), environment ($r=0.266$, $p<0.001$), and the total score ($r=0.207$, $p<0.001$). Similarly, higher education levels for husbands correlated positively with physical health ($r=0.120$, $p<0.05$), psychological health ($r=0.208$, $p<0.001$), environment ($r=0.199$, $p<0.001$), and the total score ($r=0.160$, $p<0.01$). These findings suggested potential positive contributions of higher education levels to various aspects of QoL. Gravida and parity, indicating pregnancy and childbirth counts, exhibited significant correlations with QoL dimensions. Higher numbers of pregnancies and childbirths correlated negatively with physical health (gravida: $r=-0.182$, $p<0.001$; parity: $r=-0.183$, $p<0.001$), psychological health (gravida: $r=-0.158$, $p<0.01$; parity: $r=-0.157$, $p<0.01$), and the environment dimension (gravida: $r=-0.173$, $p<0.001$; parity: $r=-0.164$, $p<0.01$). These results suggested that more excellent pregnancy and childbirth counts might associate with lower perceived well-being in different QoL aspects. The frequency of stillbirth was negatively correlated with environment dimension ($r=-0.129$, $p<0.01$) and total score of QoL ($r=-0.104$, $p<0.05$), implying a potential link between experiences of stillbirth and perceptions of environmental quality and overall well-being. Vaginal delivery exhibited significant correlations with QoL dimensions. Negative correlations were observed between vaginal delivery and physical health ($r=-0.181$, $p<0.001$), psychological health ($r=-0.136$, $p<0.01$), environment dimension ($r=-0.152$, $p<0.01$), and total score ($r=-0.161$, $p<0.01$). These findings suggested that mode of delivery might influence various dimensions of QoL among postmenopausal women.

Continued.

Study	Country	Scale used	Aim	Age (in years)	Risk factors affecting QoL
Hajj et al ¹⁴	Lebanon (Sample size=1113)	Menopausal QoL questionnaire (MENQOL)	To investigate the relationship between menopause related discomforts and QoL of Lebanese women correlated with the physical activity level, anthropometric, medical, socio-demographic and lifestyle variables, during mid-life.	49.53±5.74	Multiple regression models exploring various subdomains offer insights into associations between factors and each domain. In the vasomotor subdomain, the crowding index shows a significant relationship ($p<0.05$), while education level, BMI, and waist-hip ratio lack notable connections. Smoking and alcohol consumption stand out, with moderate effect sizes (smoking: $t=2.011$, $p<0.05$; alcohol: $t=-3.502$, $p<0.001$). Menopausal status is substantially associated ($t=7.698$, $p<0.001$), while children's number lacks significance. In sexual subdomain, education does not associate, but marital status does ($p<0.001$, $t=5.580$). Crowding index, BMI, smoking, and children's number show less impact ($p>0.05$). Alcohol relates negatively ($p=0.006$, $t=-2.732$), while menopausal status is positive ($p<0.001$, $t=5.577$). Health evaluation strongly links ($p<0.001$, $t=3.827$), and physical activity negatively relates ($p<0.001$, $t=-5.091$). Moving to the psychosocial subdomain, education negatively links ($p<0.001$), crowding positively ($p=0.036$), and menopausal status negatively ($p=0.001$). Auto-evaluation and physical activity significantly connect ($p<0.001$), while other factors lack clear associations. Lastly, in physical subdomain, education is negatively associated ($p<0.001$), and crowding index is positive ($p=0.012$). Marital status, waist-hip ratio, smoking, alcohol, menopause, children's number, and appetite lack significance. Auto-evaluation and physical activity show influential connections ($p<0.001$). These findings deepen our understanding of factor-subdomain interactions.
Barati et al ¹⁵	Iran (Sample size=270)	Menopausal QoL questionnaire (MENQOL)	To determine the prevalence of menopausal symptoms and factors associated with the QoL among postmenopausal women.	52.19±3.98	Age: Participants ≤ 55 vasomotor=2.95±1.86, psychosocial=2.23±1.26, physical=2.56±1.06, sexual=2.18±1.78, total=2.48±1.05. Participants aged >55 : vasomotor=2.53±2.09, psychosocial=2.32±1.31, physical=2.77±1.05, sexual=1.99±0.19, total =2.40±1.01. P for age-related differences is provided for each dimension, indicating potential variations based on age. Education: Participants with different education levels assessed for QoL dimensions. P reported for each dimension to indicate significance of differences based on education levels. Marital status: Different marital status categories analyzed regarding QoL dimensions. P given for each dimension, revealing potential associations between marital status and QoL. Job: Participants with different job types were evaluated for QoL dimensions. P values provided for each dimension, indicating potential job-related impacts on QoL. Economic status: Participants' economic status, categorized as low, mid, or high, was examined for relationship with QoL dimensions. P reported for each dimension, demonstrating potential economic status-related variations. Smoking: QoL dimensions compared between participants who smoke and those who do not. P are given for each dimension, indicating potential associations between smoking and QoL. Exercise (times/week): Participants exercise frequency per week was analyzed for connection to QoL dimensions. P reported for each dimension, suggesting potential relationships between exercise and QoL. Supplemental intake: Participants' intake of omega-3 supplements was considered about QoL dimensions. P indicating potential impacts of omega-3 intake on QoL. Postmenopausal stage: Participants' postmenopausal stages (1<5 years ago or 5 or more years ago) examined for association with QoL dimensions. P for each dimension reveal potential differences based on post menopausal stage.

DATA EXTRACTION

The data extraction process involved systematically gathering key information from each selected study to ensure a comprehensive analysis. Extracted data points included essential study characteristics such as the names of the authors, year of publication, study design, sample size, and geographic location of the study.

Demographic details of the participants, including age, menopausal status, and relevant socio-demographic variables, were also meticulously recorded. This helped in understanding the study populations and the context within which the research was conducted.

The review also focused on identifying and documenting the factors that influenced the QoL among postmenopausal women. These factors were categorized into physical, psychological, and socio-demographic domains, and their specific impacts on various aspects of QoL were carefully noted.

Additionally, detailed information regarding the methodological approaches of each study, including measurement tools, statistical analyses, and significant findings, was systematically extracted. This thorough approach ensured a deep understanding of each study's contributions, providing a robust foundation for the synthesis and analysis presented in the review.

DISCUSSION

Postmenopausal women's QoL encompasses their overall well-being, physical health, psychological state, and social functioning after completing menopause. Menopause, a natural process around age 50, triggers hormonal shifts leading to physical and emotional symptoms affecting daily life. Factors like symptom severity, health conditions, mood, and socio-demographics influence the QoL.¹⁻³ Addressing menopausal symptoms involves medical interventions, lifestyle adjustments, and emotional support, including hormone therapy, exercise, and stress management. Enhancing QoL involves holistic care, recognizing physiological changes, and the broader psychosocial context. Healthcare professionals can empower women to navigate this transition with better well-being and an improved sense of life quality.

Hajj et al reported that women in the peri-menopausal phase exhibited the highest average scores in the vasomotor, physical, and psychosocial domains ($p < 0.001$), while those in the postmenopausal and menopausal stages had elevated scores in the sexual domain ($p < 0.001$).¹⁴ A significant correlation ($p < 0.001$) was found between low physical activity levels, affecting 45.4% of participants, and the vasomotor, psychosocial, physical, and sexual subdomains of the MENQOL questionnaire. Factors such as menopausal status, educational level, crowding and body mass indexes, marital status, smoking, and alcohol

intake demonstrated meaningful associations with the frequency and severity of menopause-related symptoms.

Inceboz and colleagues investigated to discern the factors influencing the severity of menopausal symptoms and QoL among women in Manisa, Turkey.¹⁰ The cohort comprised 268 climacteric women with a mean age of 50.7 ± 6.6 years. The findings illuminated that many of these women lacked knowledge about menopause. A remarkable finding was the inverse correlation identified between MRS scores and domains of QoL, including physical health, psychological well-being, and social relationships. Furthermore, the study highlighted the positive impact of factors such as educational attainment, menopausal knowledge, participation in family decision-making, and economic status on the QoL domains. In contrast, being married and exhibiting a high BMI were associated with unfavourable effects.

Norozi and colleagues conducted a cross-sectional study involving 200 postmenopausal women in Isfahan.¹¹ The study employed the behavioural analysis phase of the PRECEDE model to examine factors linked to QoL. The research underscored the pivotal role of attitude toward menopause, with this factor obtaining the highest mean score among the participants. QoL significantly correlated with attitudes toward menopause and perceived self-efficacy. The study further unveiled the influence of marital and occupational status and educational level on the resulting QoL scores.

Mohamed and colleagues assessed menopause-related symptoms and their ramifications on women's QoL. The study unveiled the prevalence of severe symptoms across various domains, particularly the sexual domain, which showcased the highest mean score. Zhu and colleagues conducted a cross-sectional study encompassing 320 menopausal women, emphasizing the multifaceted impact of current smoking, menopausal symptoms, and attitudes on QoL scores.¹²

Nazarpour and colleagues engaged in a cross-sectional study with 405 postmenopausal women. Their exploration unveiled an inverse correlation between QoL scores and total MRS scores. The research identified several influential factors, including the duration of menopause, gravida, parity, and educational level, which influenced the QoL scores. Furthermore, educational attainment, spouses' educational levels, and monthly family income were identified as additional influential determinants of QoL scores.¹³

Barati and colleagues conducted a cross-sectional study encompassing 270 postmenopausal women, utilizing the MENQOL questionnaire as a tool. The study illuminated associations between QoL scores and attributes such as employment status, economic well-being, smoking habits, exercise routines, Omega-3 supplementation, and postmenopausal stage. Kim and colleagues analyzed secondary data, revealing the influence of age, exercise

patterns, health conditions, perceived stress levels, glycemic control, and postmenopausal period length on HRQoL scores.¹⁵

CONCLUSION

The QoL among postmenopausal women is influenced by various factors spanning physical, psychological, and socio-demographic domains. Menopausal status, educational level, and lifestyle choices notably shape this experience. Health education and physical activity interventions promise to improve QoL by addressing knowledge gaps and lifestyle adjustments. Attitudes toward menopause, self-perceived efficacy, and family decision-making emerge as vital determinants. Menopause-related symptoms, particularly vasomotor and sexual issues, significantly affect well-being across various dimensions. Socioeconomic indicators like income and education are closely linked to QoL outcomes. A holistic understanding necessitates a multidimensional approach encompassing both physiological and psychosocial elements. Longitudinal investigations are essential for causal insights and dynamic transitions. Targeted interventions addressing specific life quality facets can yield focused enhancements. Policy and intervention efforts addressing these factors can potentially enhance the overall well-being of postmenopausal women.

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